Canada

# Suicide Among the Aged in Canada

March 1982

Health and Welfare Canada Santé et Bien-être social Canada

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# SUICIDE AMONG THE AGED IN CANADA

Policy, Planning and Information Branch
Department of National
Health and Welfare

Également disponible en français sous le titre
"Le suicide chez les personnes âgées au Canada"

March 1982

## PREFACE

The objective of this study is to review current literature and data on suicide among the aged in order to identify high-risk groups among this population in Canada.

The views expressed in this document are the responsibility of the author and do not have formal status, in terms of official acceptance within the Department, nor do they necessarily reflect government policy.

It is the hope of the Branch that this study will be of benefit to persons working in this area and contribute to the exchange of information in the health and social policy fields.

"Social scientists,
historians and social
commentators have long decried
the abandonment, lack of dignity,
and social isolation that society
forces on our older people. Unless
there is a movement toward
effective integration of
this group, suicides within
it will almost certainly
increase as our elderly
population expands."

Robert Niccolini

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# SUICIDE AMONG THE AGED IN CANADA

## I. INTRODUCTION

In 1974, Canada had a reported suicide rate of 12.9 per 100,000 population.[1] This represents a lower-middle position when compared to Greece and Italy with rates of 2.8 and 5.8 respectively, and Finland and Hungary with their respectives rates of 25.1 and 40.6. Caution is, however, recommended when comparing suicide rates between countries. There are variations in methods of reporting. In addition, cultural differences and religious beliefs are among other factors which may account for dissimilarities in the designation and/or reporting of suicides. Recognition of the difficulties in the overall comparison of rates in no way denies the seriousness of the problem. The purpose of this study is to explore the Canadian situation.

Suicide is now the fourth cause of potential years of life lost (PYLL)* in Canada between ages one and 70, immediately following ischaemic heart disease, motor vehicle, and other accidents. The rate of PYLL for suicide has increased two-fold since 1950.[2]

The reported suicide rate for Canada in 1977 was 14.3 per 100,000, compared to 16.2 for the group aged 65 years and over. A breakdown by sex for Canada gives a reported rate of 21.2 for males and 7.3 for females, as compared to 26.9 and 7.8 for males and females 65 years of age and over. In brief, there is a sex difference in the suicide rate for the total Canadian population and for the group aged 65 and over. The difference is particularly significant in the case of male senior citizens where the rate for elderly men is more than three times that of elderly women. This will be discussed further in another section of this study.

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* More "weight" is given to the PYLL in respect to the deaths of younger persons.

## 1. The Ramifications of an Aging Canadian Population

In 1921, elderly Canadian citizens totalled 420,000, or 4.8 per cent of the total population, compared to just over two million in 1976. According to one population projection from Statistics Canada,[3] the aged 65 and over will increase from 8.7 per cent of the total population in 1976 to 11.9 per cent (3,425,000) in 2001, after which it is expected to grow dramatically to 20.2 per cent (6,240,000) by the year 2031. Thus, during the period 1976 to 2031, the elderly population will triple in Canada. Will the increase in the size of this age group have an effect on those factors which could result in raising the suicide rate?

### Direct and Indirect Effects

The aging of the population can have a direct effect on economic, health and social programs, as it can be expected that more people will have to depend on them. If the availability of the necessary programs was adversely affected for whatever reason, the consequences for aged citizens could be serious. This is one of the areas that this paper will address.

## 2. Objectives

The objective of the study is to review current knowledge and data on the suicide of elderly persons for the purpose of identifying high-risk groups.

To achieve this objective:

(a) several major theoretical contributions relevant to suicide will be discussed in order to document propositions arrived at by some researchers following the testing of certain hypotheses;

(b) selected statistical data will be reviewed in order to delineate high-risk groups; and

(c) pertinent information will be scrutinized in order to identify the measures/services provided by federal and provincial governments and other agencies which may aid in reducing the effects of high-risk factors.

3. Definition

(a) Suicide

Although suicide as an act is probably as old as man himself, the term is more recent. It is derived from the modern Latin "suicidium". For Emile Durkheim,[4] the term "suicide is applied to all cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result". As far as the ordinary layman is concerned, suicide is probably considered as an act of self-destruction. In this study, data on suicide will correspond to the definition used by Statistics Canada:[5]

> "Suicide refers to deaths reported by coroners and medical examiners of official death registrations as having been due or 'probably due' to suicide, following the usual post-mortem inquiry, investigation or inquest as required by law."

(b) The Aged

The aged refers to the segment of the population which is 65 years of age and over. Although such a chronological age represents an arbitrary bench mark, the fact is that, in 1976, 87.9 per cent of those aged 65 and over were retired.[6] There are various reasons for retirement, but the most significant at age 65 is that it is the mandatory age required by many pension plans; ill health can of course oblige an individual to retire before reaching the "normal retirement age" of 65.

(c) Crude and Standardized Rates

Crude and standardized rates will be used in this study in order to establish suicide rates.

Crude Rate

The crude rate for any population means the ratio of deaths in a particular population group per 1,000 population of that group. Unless otherwise mentioned in this text, the crude suicide rate is used in this study.

Standardized Rate

The standardized rate takes into account variations in different population groups by adjusting the age structure of the population group to some corresponding population group.

4. Data -- Sources, Caveats, and Limitations

It is generally accepted that data on suicide are underreported. Researchers thus tend to produce estimates from the officially reported number of suicides which vary from one-third[7] to one-half,[8] depending upon the degree of conviction the researcher has regarding the underreporting. Douglas[9] has listed five reasons for the unreliability of official statistics on suicides. This unreliability results from the:

(a) choice of the official statistics to be used in making the tests of the sociological theories;

(b) subcultural differences in the attempts to hide suicide;

(c) effects of different degrees of social integration on the official statistics keeping;

(d) significant variations in the social imputations of motives; and

(e) more extensive and professionalized collection of statistics among certain populations.

The source for the basic Canadian data for this study is Statistics Canada. This department is very cognizant of the data deficiencies. Imperfect, however, as they may be, they will give some perception of the magnitude of the problem.

Studies examining the relationship between suicide and the aged per se have been carried out in the United States of America (U.S.A.), the United Kingdom, and Western Europe, but, unfortunately, little has been accomplished in Canada. The industrial societies where studies have been undertaken are not, however, so different culturally from Canadian society that findings from the studies cannot be applied in understanding the factors leading elderly Canadians to end their lives.

## II. THE POPULATION AT RISK

### 1. Elements of Selected Theories on Suicide

A theoretical review of suicide cannot start without looking at the major work accomplished by Emile Durkheim at the end of the 19th century in France.

After examining the psychological and other factors, such as race and heredity, which influence suicide, Durkheim concluded that sociological factors best explained suicide as a collective phenomenon. The inference is that the force that determines the suicidal act is not psychological but social.

Durkheim, taking into account social causes, classified suicide under four types, divided into two sets. The first set refers to egoism and altruism, and the second to anomie and fatalism. Egoism connotes a lack of meaningful social interaction. Altruism, on the other hand, refers to an excess of social interaction. Durkheim defined three varieties of altruistic suicide:

(a) Obligatory altruistic suicide: that occurring among those who are aged, blind, sick, and the like.

(b) Optional altruistic suicide: that in which the victim is not attached to life and has a rather favourable opinion regarding suicide.

(c) Acute altruistic suicide: that represented by martyrs, soldiers and the like (the mystical suicide).

Anomie refers to a lack of normative restraints or regulations on behaviour. Conversely, fatalism refers to an excess of regulation.

According to Maris,[10] the suicide rate as described by Durkheim depended upon forces that are external to, and constraining

of, the individual. To the degree that the societal groups are harmonious, integrated, and regulated, and the individual is an active, central member of those societal groups, then the individual's suicide potential will be low and a population of such individuals will have a low suicide rate. Durkheim therefore concluded that "the suicide rate varies inversely with the integration of social groups of which the individual forms a part".[11]

Durkheim arrived at that proposition after having empirically tested a number of propositions. His findings included the following: that older adults have higher suicide rates than children and young adults; that suicide is known to be rare among children and to diminish among the aged at the last confines of life; that the male suicide rate is almost three times that of females at all ages; and that the suicide rate of the unmarried, especially the divorced, exceeds that of the married.

All of these particular research results are explained by the postulate on social integration, of which Durkheim never gave a precise definition. From Durkheim's work, however, it can be deduced that social integration increases when groups in society have lasting and stable interactions. Other researchers who tested Durkheim's hypotheses supported many of his conclusions.

Andrew Henry and James Short based their theory on a frustration-aggression hypothesis and the clinical formulation of suicide as a form of aggression. The authors examined the hypothesis that "the acts of both suicide and homicide are undifferentiated responses to extreme frustration arising from extreme loss of position in the status hierarchy relative to the status position of others in the same status reference system".[12] Frustration was thus defined in terms of loss of status.

Henry and Short related the suicide rate to economic cycles. Although they agreed with Durkheim that high social status and low external restraint are associated with high suicide rates, the two

authors went further by adding the variables of "internal restraint" and "frustration-aggression". Their basic position was that suicidal behaviour is determined by both external and internal forces operating jointly. In addition, Henry and Short assumed that aggression is often, but not always, a consequence of frustration.[13]

Like many other sociologists, Jack Gibbs and Walter Martin recognized that Durkheim's theory is incomplete because social integration cannot be precisely defined. Their status-integration theory[14] predicts an inverse relationship between the suicide rate and status integration. It assumes five postulates:

(a) the lower the suicide rate, the more stable and durable the social relationships;

(b) the more stable and durable the social relationships, the more conformity to social expectations;

(c) the more conformity to social expectations, the less role conflict;

(d) the less role conflict, the less individuals occupy incompatible statuses; and

(e) the less individuals occupy incompatible statuses, the more status integration.

Peter Sainsbury[15] examined the difference in suicide rate among city wards. He found that the suicide rate was related to social isolation, social mobility, and social disorganization (e.g., divorce). In studies undertaken among the aged in London, England, Sainsbury reported that loneliness and lack of occupation appeared to be more of an urgent problem among elderly citizens than poverty.

Warren Breed examined the kind of interpersonal social relationships that members of the society experience. More precisely, he

explored the phenomenon of loss in relation to suicide: loss of a position, of a person, and of mutuality which relates to a weakening of mutual social relationships in general, not the specific loss of any one person. According to Breed,[16] loss of mutuality, as a type, is much like Durkheim's "egoistic" category, in which the individual lacks bonds and ties to other persons and does not share close relationships with others.

In summary, the key elements of selected theories on suicide have been reviewed. Durkheim's concept was that of social integration, while Henry and Short supported the frustration-aggression theory. Five basic assumptions underlie the status-integration theory of Gibbs and Martin. Sainsbury enunciated concepts of social isolation, social mobility, and social disorganization; Breed puts his accent on interpersonal social relations.

## 2. Major Determinants of Suicide

Why do elderly citizens commit suicide? A number of the factors leading to suicide can be identified through a review of the relevant literature: social isolation, loneliness, retirement, marital status, income, and ill health. All of these factors have an important effect on the well-being of the aged. Furthermore, they all affect older individuals in varying degrees. Improvements affecting any of these variables could have a positive effect on the well-being of the aged quite apart from any concern related to the suicide.

### Loneliness and Social Isolation

Loneliness, which can occur even when a person is surrounded by other people, is often associated with the aged who commit suicide. Those who are socially isolated experience a greater sense of loneliness. Social isolation may also lead to a lack of social integration. The latter, rather than being caused by any single loss, is the result of a combination of losses. Retirement and widowhood in particular constitute two important losses representing major status changes,

typically occurring in old age. They denote the permanent loss of two key social roles, as well as the activities and relationships defining them.[17] Many researchers[18, 19, 20, 21, 22, 23, 24, 25] are of the opinion that significant losses and/or changes in status are important factors that could contribute to suicide.

Retirement

Most elderly people are not gainfully employed. In 1976, persons aged 65 and over accounted for 12.2 per cent of the labour force. Of these, 68.5 per cent were men and 31.5 per cent women.[26]

The retiree has to adapt to a new role at a time of life when adaptation to change is more difficult. Lost is the status achieved as a worker. There are no longer occupational goals to strive for. Financial dependency upon society and/or relatives may become necessary.

In 1975, almost half of the retired men, and one-third of the retired women in Canada did not retire when they wanted.[27] Since "voluntary retirement" is subject to individual interpretation, the data reported included those who had to retire because of ill health, as well as those who had to retire because of the mandatory provision in a pension plan but, knowing this provision, had accepted it, and "voluntarily retired". Also included would be those persons who voluntarily retired before age 65, but at a later date than they wanted to, often because of economic factors.

Retirement is traumatic for many retirees. This may be reflected in the finding that in the United States men live an average of about two and a half years after retirement from their jobs.[28] A Statistics Canada study on retirement and mortality,[29] published in June 1980, points out that mortality for men is higher during the second year of retirement compared to the general male population. The findings of this study, which analysed statistics on 21,000 men and women who

retired in 1970 and collected Canada Pension Plan (CPP)* benefits, should, however, be considered with caution because of the limits in the study. Men are overrepresented among CPP beneficiaries; the total population of retired people exceeds the number receiving CPP. With due regard to the concern expressed, it appears that men reaching age 66 constitute a high-risk group. In general, the suicide rate is high for older men, and retirement could be an influential factor. One researcher is of the opinion that "lack of occupation in the aged might be one way in which old men become socially isolated and predisposed to suicide".[30]

In brief, the loss of the status achieved as a worker, the provision of mandatory retirement in many pension plans, and the stress and feeling of uselessness which retirement often brings to many can all be influential factors conducive to suicide.

Marital Status

In 1978, Statistics Canada estimated that 2,135,200 persons were aged 65 and over -- 925,700 males and 1,209,500 females. The aged population included 732,400 widowed persons, of whom 136,000 were males and 596,400 females. Widows outnumbered widowers by more than four to one.

It has long been established that marital status influences the rate of suicide. The rate is generally lower for married and higher for non-married persons, whether single, separated, divorced, or widowed. As divorce is primarily associated with the young and middle aged, and widowhood with the older population, the latter phenomenon will be highlighted.

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* Retirees from Quebec are not represented in this study as Quebec administers its own retirement plan, i.e., the Quebec Pension Plan (QPP).

Widowhood must be viewed as a social and emotional crisis situation. Durkheim[31] is generally recognized as the first well-known sociologist to stress the connection between widowhood and suicide. The survivor, affected by the death of the spouse, may be unable to adapt to the new situation and, as a result, has less resistance to suicide.

The organization of a society in which elderly persons live can influence the propensity toward suicide. The transition from agrarian to urban and industrial society in North America was accompanied by the emergence of a conception of the aged which supported their involuntary isolation.[32] Young people were perceived as giving priority and allegiance to the norms of occupational achievement and this, along with the high mobility of the labour force, was said to isolate older people from their families. Consequently, there developed a view of the aged, both individually and as couples, as rejected, lonely, and a liability. To a considerable extent, this stereotype continues to prevail.[33]

Increasingly older people become less mobile themselves and at the same time may be separated by great distances from their children and other family members. Those in large urban centres face the anonymity of life there. Couples become more dependent in the later years upon each other for companionship, understanding, assistance in the activities of daily living, and a sense of security. Death of a spouse creates a sense of isolation and loneliness in the survivor; it may also threaten both independence and security, including economic security, which can be greatly altered between a couple and a single-person household.[34]

Elderly males and females have different responses to the death of a spouse. The loss of a wife perhaps removes the one important person who helped in relating to others. The husband may have relied heavily, during the working years, upon his occupation and co-workers for social and personal identity; retirement may have forced him to depend more on his spouse for personal and social significance. Under these

conditions, her death could result in his greater isolation from other individuals and groups.[35] Although the suicidal risk is greatest during the first year of widowhood, it remains persistently high for four years.[36]

The widow, on the other hand, may have a greater chance for continuing the roles of housekeeping, attending church, volunteer service, and interacting with relatives with which she is familiar. In the role of grandmother, she probably has a much broader range of meaningful activities than a grandfather* has. Thus, she may be in a relatively better position to find other kinds of associations significant enough to prevent her self-annihilation.[38] In addition, it has been suggested that the community would be more sensitive to the plight of the widow and more likely to provide meaningful ties for her than it would for the widower.[39]

The transition to widowhood can be very stressful, particularly for the widower. Following the strain of adjustment to retirement, the widower, at the death of his spouse, is forced to undertake new roles. These two factors put the elderly male in a totally different situation with which he has to cope.

Income

Generally speaking, there is less income available in retirement. This in turn may affect the entire network of social relations. The aged may find it difficult to adjust their lives to a substantial change in their standard of living and continue to maintain satisfactory ties with relatives, friends, and community organizations. They may interpret the changes in their lives as a downward mobility, which has been suggested as an important factor in the explanation of suicide.[40, 41, 42]

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* The role of grandfather may be an important factor in the survival of the elderly male widower.[37]

Researchers have emphasized the importance of economic factors in suicide.[43, 44, 45, 46, 47, 48, 49, 50, 51] Since it is well known that it requires time to adjust to the financial situation in retirement from that which existed in the job situation, it appears reasonable to suggest that failure to come to terms with the changed economic status might influence the level of suicide among the aged.[52] Economic problems, coupled with ill health, widowhood, and the like, might well result in a higher rate of suicide.

Physical Illness

Serious physical illness can have very important consequential effects. Some elderly persons may prefer death by their own hand rather than to wait for it passively and unhappily. Researchers[53, 54, 55, 56, 57, 58, 59, 60] have pointed out that suicide potential is heightened when active serious physical illness exists in the aged. Their statistics show that between 35 and 85 per cent of those aged persons who committed suicide had severe illness. Illness may result in other factors, such as loneliness and social isolation, economic problems, and loss of independence, all of which when combined may contribute to suicide.

More than two-thirds of those aged 65 and over have some chronic disability such as hypertension, arthritis, diabetes, deafness, visual disturbances, or other conditions that interfere with optimal communication.[61] Disability, defined in terms of activity restriction, affects 30 per cent of elderly Canadians.[62] Serious chronic illness can lead to depression and finally to suicide.[63] Thus, the aged with a chronic illness constitute a high-risk group. Although suicide notes vary somewhat according to the age and social or economic class of the writer, physical illness is more often given by the aged as a reason for committing suicide.[64]

Between 70 and 90 per cent of the elderly suicides had been seen by their doctors within three to six months of their death. Physicians are in a good position to detect suicidal behaviour in their patients,

to take preventive action, or to make appropriate referrals.[65, 66] Although it is true that in the general population an individual's health condition could improve during this period of time, this is less likely true for elderly persons. Their strength tends to weaken progressively.

Mental Illness

Suicide in old age can occur in the absence of any mental disorder. Studies have, however, shown an incidence of such illnesses as depression and dementia.

Depression has been frequently mentioned as an accompaniment of suicidal behaviour. This mental disorder is particularly common among people in the later years and has generally been recognized as a precursor to suicide.[67, 68, 69] In a study in the U.S.A. undertaken in 1966, it was found that 28 per cent of all suicides were committed by persons 60 years old and over. In this group, more than half suffered from depression.[70] Another U.S.A. survey reported that from age 55 on, the incidence of depression may be as high as 10 per cent; in those aged 65 and over it may rise to as high as 50 per cent.[71]

Dr. Peter Bolland, Chairman of the Special Committee on Geriatrics of the College of Family Physicians of Canada, has said that depression among aged persons in institutions is the most common mental illness over age 65, with its frequency only equalled by dementia over age 75. He sees isolation, bereavement, and illness, coupled with economic and social disadvantage, as major factors leading to depression in the aged.[72] Although Dr. Bolland refers to institutionalized elderly people, the factors enumerated can also apply to the non-institutionalized. Depression is a frequent reaction to the vicissitudes of life experienced by the aged. Older adults are slower to adjust both mentally and physically to the changes resulting from retirement, reduced financial resources, death of family members or friends, and illness.[73] Further, elderly people are more apt to suffer mental

breakdowns if they are not socially integrated into the community and if they do not feel useful, valued, and loved.[74] Positive measures to aid the situation are offered by Fann and Wheless. They state: "Elderly persons who continue to work, perhaps retaining a measure of meaning in life, have a lower frequency of depression. Physical activity is useful in managing somatic aspects of grief and depression, and the interpersonal relations of work may help restructure behaviour."[75]

Probably less than five per cent of persons aged 65 and over manifest senile dementia.[76] One study reports that symptoms of senile dementia were observed in only 10 per cent of the aged who attempted suicide.[77] A successful suicide usually requires coordination, planning, determination, and an awareness of reality. Therefore, a person devoid of these faculties, coupled with impaired judgement and deterioration of intellectual capacities, is not likely to accomplish a successful suicide.[78]

Mental ill health must be regarded as an important predisposing factor in suicide in old age. Modern society tends, however, to attribute "mental problems" to all those who decide to take their own life. One possible contributing reason for this readiness is the wide acceptance of "psychological", "psychoanalytical", and "psychiatric" explanations of behaviour. A second is the assumption that mainly people with mental problems commit or attempt suicide, thus denying the possibility that social problems, social arrangements, or social policies may be at fault.[79]

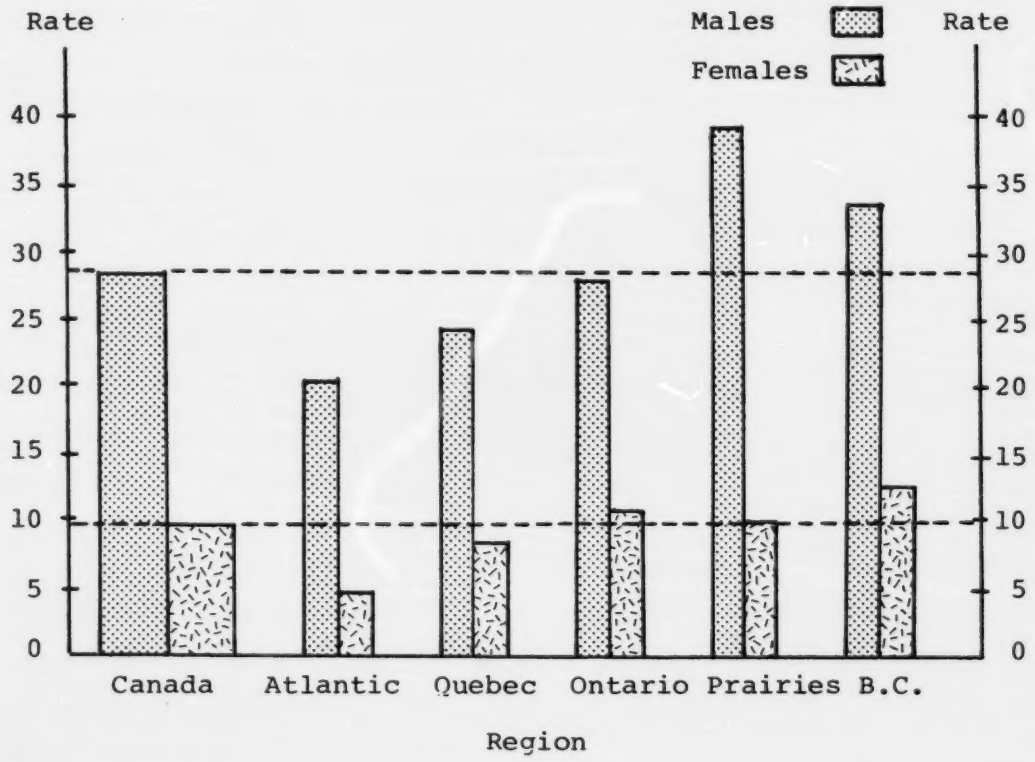
## 3. Canadian Suicide -- A Statistical Overview

Suicide is seldom recorded as such before age 15. Prior to this age, regardless of the findings, the act is usually deemed an accident. Thus, suicide statistics for the adult population aged 15 and over are probably a more accurate reflection of the true situation than are those reported for the population as a whole. With this caution in mind, the crude suicide rate for the total Canadian population in 1977

was 14.3 per 100,000 inhabitants, as opposed to 19.0 for the adult population.* Per 100,000 males in the total population, the rate was 21.2 and for females 7.4; the respective figures for the adult population are 28.5 and 9.6.

Chart 1

Crude Suicide Rate for the
Population Aged 15 and Over, by Sex, Canada and Regions, 1977
(per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and on Statistics Canada Estimates of Population by Sex and Age, 1977.

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* Number of reported suicides in the total population: 3,317; number of reported suicides in the adult population: 3,284.

Chart 1 shows that among adult males, suicide rates in Western Canada are higher than the Canadian average, whereas for females rates are higher than average in both Ontario and Western Canada.

The Population Aged 65 and Over

In 1977, 335 Canadian senior citizens were reported as having committed suicide. Thus, old people, while representing nine per cent of the total population, accounted for 10 per cent of all reported suicides in Canada. As their numbers increase, so does the potential for suicide among this population: in 2031, the aged will represent 20 per cent* of the total population and their suicide rate is expected to reach about 21 per cent.** In 1977, the suicide rate per 100,000 senior citizens was 16.2, which is slightly higher than that of the total population (14.3), and slightly lower than that of the adult population (19.0).

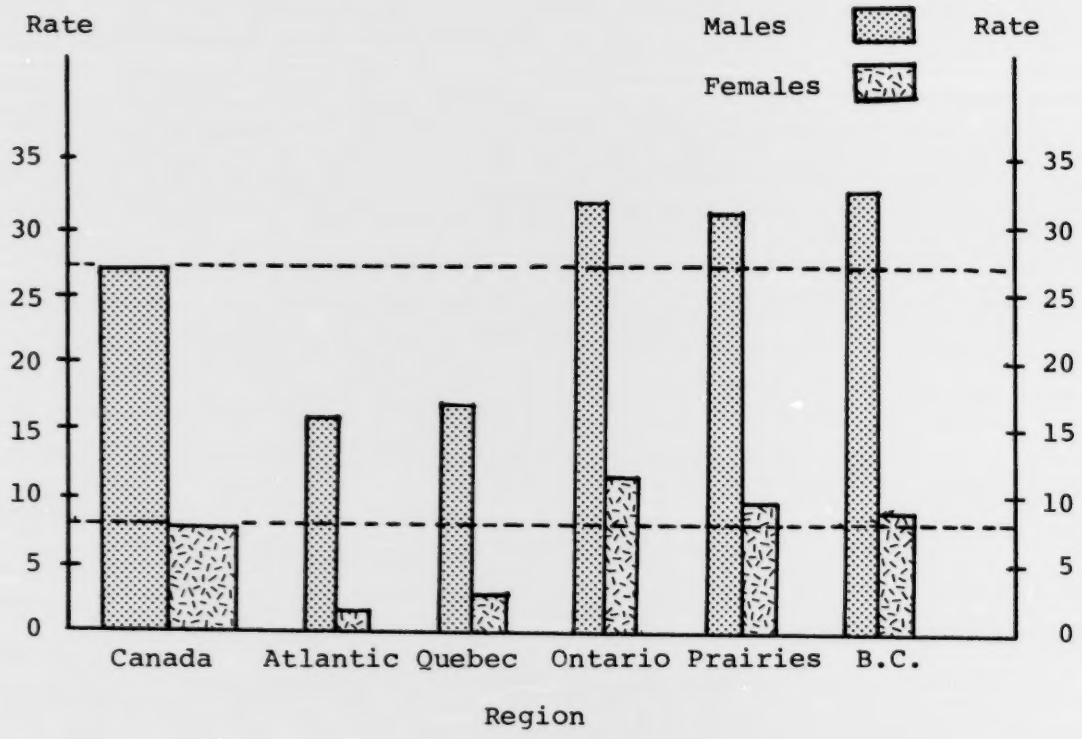
---

* Rate based on Statistics Canada Projection No. 3.

** Rate based on Statistics Canada Projection No. 3 and on Statistics Canada Vital Statistics, 1977.

Chart 2

Crude Suicide Rate for the Population Aged 65 and Over, by Sex, Canada and Regions, 1977 (per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and on Statistics Canada Estimates of Population by Sex and Age, 1977.

Chart 2 shows that male senior citizens, like their counterparts in the adult population, generally have a higher suicide rate than do females -- the rate of 26.9 for males aged 65 and over being more than three times that of females, at 7.8.

Ontario, the Prairies, and British Columbia have a similar suicide rate for male senior citizens (about 32 per 100,000 inhabitants) which

is significantly higher than the suicide rate of 17.1 in Quebec and 16.1 in the Atlantic Region. The male suicide rate for the aged in Ontario, the Prairies, and British Columbia is also higher than for Canada as a whole. Comparisons for older females follow the same pattern.

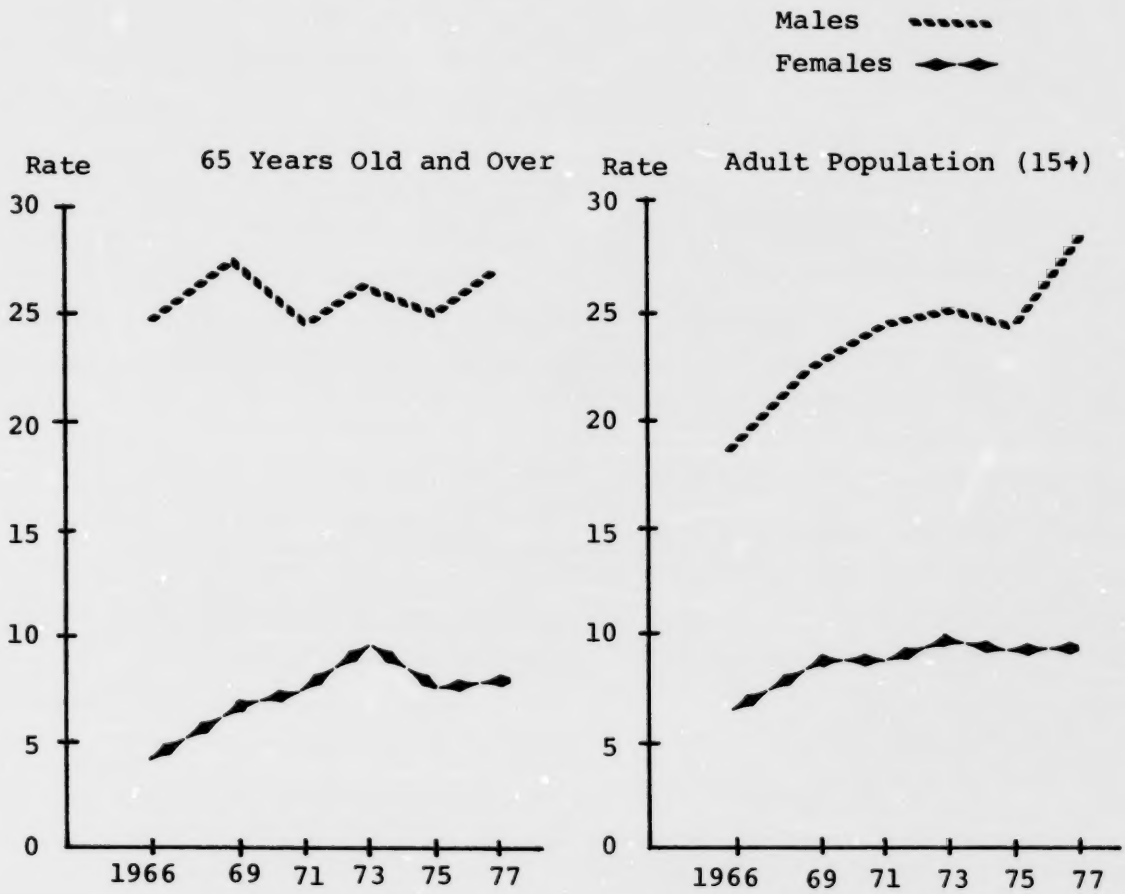
Regardless of the population under study -- total, adult, active (i.e., labour force aged 15-64) or those aged 65 and over -- the suicide rates are higher in Western than in Eastern Canada. To date, no study has been undertaken in an attempt to delineate the possible reasons for this. Factors such as reporting practices, religion, ethnicity, and the transitory nature of the population, with the concomitant effects of such migration for the citizens born in a region, may tend to influence the rate of suicide.

## Standardized Suicide Rate

The standardization of suicide rates is important. It can take into account variations in suicide rates due to difference in the age-sex population structure or changes in a particular population over time. Chart 3 compares the standardized suicide rate for the adult population with the elderly population, by sex, for selected years from 1966 to 1977, the reference year being 1977.

Chart 3

Comparison of the Standardized* Suicide Rate for Different Populations, by Sex and Selected Years, Canada (per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1977, and Estimates of Population by Sex and Age, 1977.

* Standardized to 1977 population within each age group.

From Chart 3 it can be observed that for both populations, males have higher suicide rates than females. For those 65 and over, male rates have fluctuated over the years, while the female rates increased between the years 1966 and 1973.

The standardized suicide rate for males aged 65 and over was higher from 1966 to 1971, and again thereafter until 1975, compared to the male standardized suicide rate for the adult population. In 1977, the suicide rate for males was slightly lower than that of the adult population, that is, 26.9, as opposed to 28.3. The standardized suicide rate for women aged 65 and over has increased since 1966, but still remains slightly below the standardized suicide rate for the adult population.

The male adult rate showed a steady increase from 1966 to 1971, remained fairly constant until 1975, and then took a sharp upward turn; the rate for elderly males showed a tendency to fluctuate. The female adult rate during the period remained fairly constant; that for elderly females increased fractionally with a rather sharp rise in 1973 before declining.

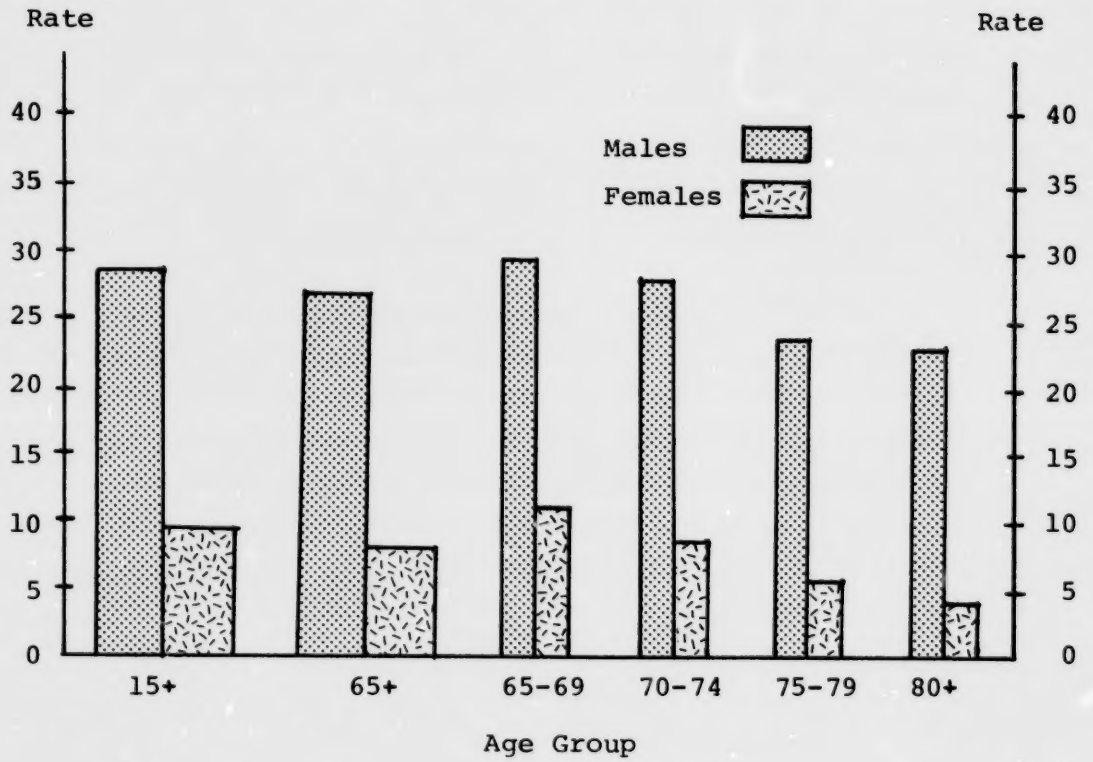
The standardized rates are somewhat higher in the case of the active population (see Chart 9, Appendix B), compared to the adult population. The rates for both sexes aged 65 and over show similar trends when compared with the active population and with the adult population.

Comparisons Between Several Population Groupings

Chart 4 shows a comparison of crude suicide rates for 1977 for the adult population, the population aged 65 and over, and for selected five-year groupings of the older population.

Chart 4

Crude Suicide Rates for Selected
Population Age Groupings, by Sex, Canada, 1977
(per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and on Statistics Canada estimates of Population by Sex and Age, 1977.

Males between the ages of 65 and 69 have a suicide rate more than double that of females in the same age group. The difference is even higher in later age groups. In summary, the gap in the suicide rate between the sexes increases with age in the elderly population.

The suicide rate for the elderly population was slightly lower in 1977 than that of the adult population. Both males and females aged 65 to 69, however, had a higher crude suicide rate compared to the adult population -- that is, 29.3 and 11.1, as compared to 28.3 and

9.6. When the 65-69 age group is compared to those aged 65 and over, males and females in the former have higher suicide rates, that is, 29.3 and 11.1, as opposed to 26.9 and 7.8 in the latter group.

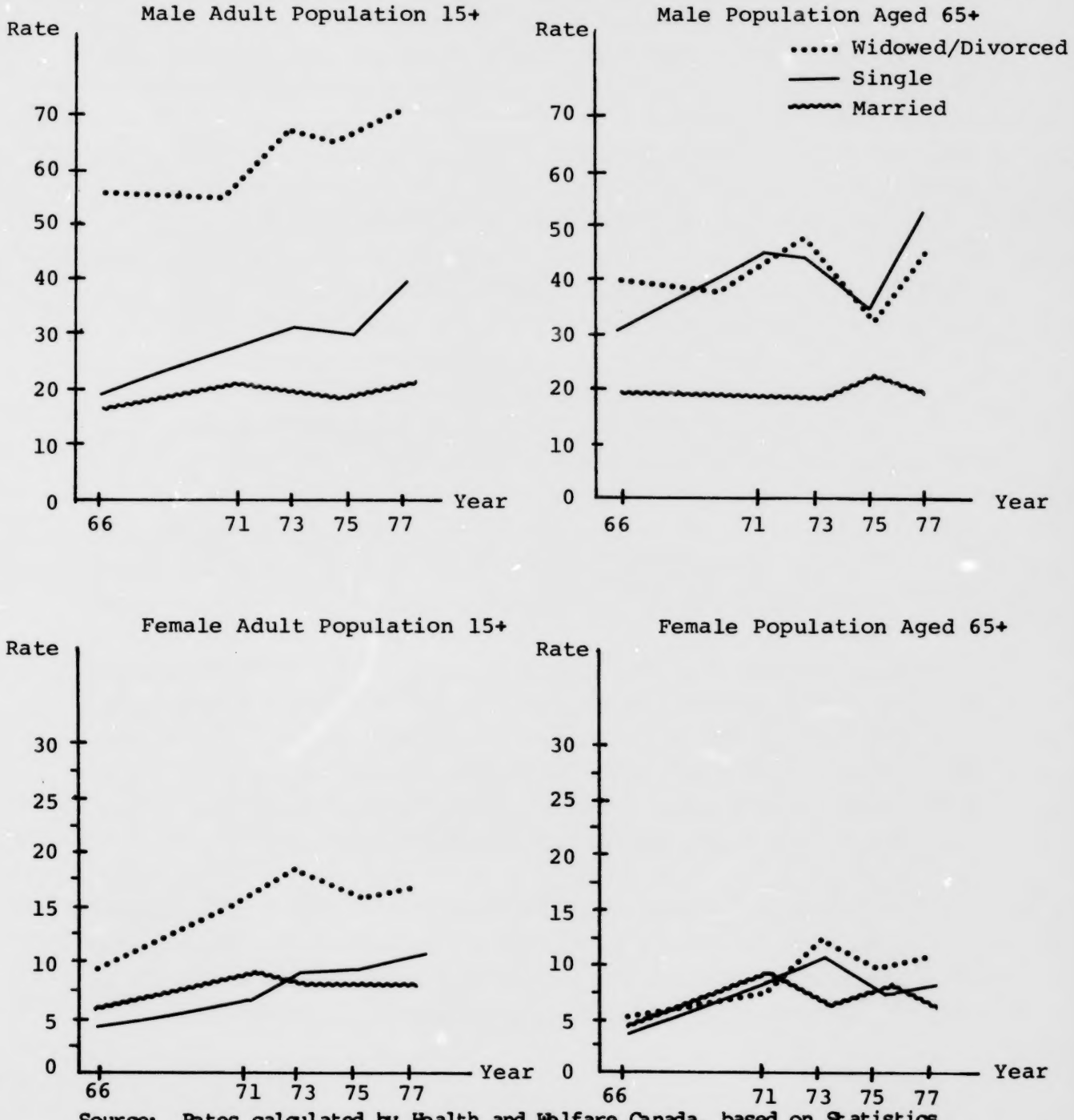
In brief, the major findings demonstrated in Chart 4 are that suicide rates for both sexes decline with age and that in the 65-69 group the rates for both sexes exceed those for the overall elderly and the adult populations.

## Marital Status and Suicide

As mentioned earlier, marital status has an influence on the rate of suicide. Chart 5 shows crude suicide rates for Canada according to marital status and sex. The suicide rate is influenced by the age composition of the population. It is therefore important to take this into account in comparative studies. In the present case, as a short period is involved, utilizing crude suicide rates should not make a marked difference in the suicide rates.

Chart 5

Crude Suicide Rates for the Adult and Aged Populations, by Sex, Marital Status, and Selected Years, Canada (per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Estimates of Population by Sex and Age, 1977.

The foregoing charts, showing both adult male and female populations according to marital status, indicate an overall trend toward increasing suicide rates, except among married persons in both sexes. A wide gap exists between widowed or divorced male adults and single and married male adults. Looking at the chart concerning the female adult population, the gap is still the highest between divorced or widowed female adults and single and married female adults, but less of a gap exists between widowed or divorced female adults and single and married adults.

The chart showing the elderly male population indicates that those who are widowed, divorced or single have similar trends. Suicide rates for married elderly males are lower than those in other statuses and are more stable. The chart concerning the elderly female population shows a fluctuation for all marital statuses. There is, however, an overall increase in suicide rates for widowed or divorced elderly females.

When rates for divorced or married males are compared with the adult and elderly male populations, it can be observed that the overall suicide rate is higher in the adult population. This apparent difference in widowed or divorced rates can probably be explained by a higher rate of divorce in the adult population. The elderly male population has, however, a higher suicide rate for singles than in the adult male population. Social isolation and loneliness, which are probably greatest among elderly persons, may be responsible for the difference. Married males in both populations have a similar suicide rate, which is the lowest among marital statuses examined.

Widowed or divorced women in both adult and elderly populations have a higher suicide rate than their single and married counterparts. The suicide rate concerning widowed or divorced females is also higher in the female adult population compared to the elderly population.

High-Risk Groups

This study confirms Durkheim's findings that male suicides are three times greater than females and that the suicide rate of the unmarried (i.e., single, widowed, or divorced) exceeds that of the married. This can be explained by a lack of status integration. As Warren pointed out, the loss of a position and/or of a person results in a lack of bonds and ties to other persons which have an important effect on the aged. Thus, unmarried elderly people, especially those who are widowed or single, constitute a high-risk group.

Another high-risk group is retired people. In a recent Statistics Canada study, it was found that the mortality rate was high in the second year of retirement. According to the authors of this study, stress was the enemy. Sainsbury, in a study in London, England, found that loneliness and lack of occupation appeared to be an urgent problem among the aged. Given more meaningful roles, stress, loneliness, and lack of occupation could be less of a problem and the suicide rate of senior citizens might decline.

Persons with low income and poor health also constitute a high risk, as pointed out by numerous researchers. When these factors are combined with others previously mentioned, the risk of suicide is heightened in the aged.

From the 1977 reported suicide data and suicide factors analysed earlier, profiles of male and female suicide victims for that year will be described. These could, however, vary.

It appears first that they were single or widowed men, between 65 and 69 years of age, living in Western Canada. They were most likely retired, as 84.4 per cent of males in this age group were not in the labour force. Being retired, many may have lived at, or below, the

poverty level, since 59.1* per cent of males were in that situation. They were likely to have been in poor health, as various sources report that between 35 to 85 per cent of elderly persons who committed suicide were so affected.

Among elderly women who committed suicide in 1977, those in the high-risk group most likely lived in Ontario, and were between 65 and 69 years of age. They were probably widowed because this segment of the population represented 51.2 per cent of females aged 65 and over in Ontario, compared to singles who accounted for 9.3 per cent and divorced for 1.2 per cent. At that time, in that age group, it is unlikely that many victims would have been employed outside their homes since their marriage.** Very few would have been in receipt of a private pension, based on the fact that only 26.2 per cent of women aged 66 to 70 were in receipt of either a spouse's or a personal private pension. Thus, elderly women who committed suicide were probably in a precarious financial situation, and among the 67.3 per cent of those aged 65 and over who were living at, or below, poverty thresholds. Like their male counterparts, they were not likely in good health.

Discussion

One of the findings of the statistical analysis is that elderly men commit suicide three times more often than elderly women. The same is true in the total population.

Differences in roles and values between males and females may have had an influence upon their suicide rates. This may have special significance in the case of the aged. As more women enter and continue to

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* Percentage derived from the 1977 Survey of Consumer Finances based on 1976 incomes.

** In 1975, only 30.8 per cent of women aged 55 to 64 were in the labour force.

participate in the labour force throughout their lives, or a major part thereof, their suicides may increase. Data for the years from 1951 to 1977 may, to some extent, reflect this. The female rate increased from 5.1 to 9.6, that is, almost 89 per cent; the male rate increased from 15.3 to 28.3 or 85 per cent. During this period the female labour force participation was also increasing, as was divorce. As women age and reach retirement, it is likely that their rates of suicide may approximate the higher male rates. The introduction of more flexible retirement arrangements could ease the trauma of retirement with a consequent reduction in suicide among both men and women in the future.

There is, however, a situation which is not addressed in the present study but which has been the theme of many studies. Women attempt suicide more frequently than do men, but their tendency to employ methods less likely to be lethal assures a high rate of failures. This does not imply that the underlying causes of their attempted suicide are less real than in the case of men. It may, however, indicate a greater willingness on the part of women to cry out for help, even to the extent of using desperate measures.

## III. SUICIDE PREVENTION

It is not the function of this report to detail the economic, health, and social programs offered, under a variety of auspices, to serve the aged in Canada. In earlier sections, the suicide risk factors have been discussed -- poor health, inadequate income, a sense of loneliness, failure and the like. The purpose of this chapter is to examine current activities directed toward suicide prevention and to suggest possible further action.

### 1. Present Activities

#### Department of National Health and Welfare

Suicide prevention cuts across a multitude of programs and services. It is neither a "one program effort" nor is it limited to government at any level.

Mental health is an important aspect in the prevention of suicide. The Department of National Health and Welfare publishes a quarterly journal called Canada's Mental Health. The objectives of this endeavour are to stimulate an exchange of information and to support and enhance the development of good mental health programs, including the essential aspects of prevention and intervention. The National Health Research Development Program, responsible for the support of scientific activities designed to provide information to fulfill departmental needs, can fund studies on suicide. Similarly, the National Welfare Grants Program can support research and demonstration projects, including those which are related to suicide conducted by provincial and municipal governments, universities, voluntary organizations, and the like. Although submissions related to suicide have been few or non-existent, substantial amounts of money have been awarded for mental health research.

The department has been conscious of the dearth of information concerning suicide. Thus, in early 1980 it established a task force to study the various aspects of this social problem.

The Provinces

Several provinces are concerned with the general problem of suicide. Although none has focussed specifically upon suicide among the aged, the work done has important relevance to this group.

Of all the provinces, Alberta appears to have devoted the greatest attention to the problem of suicide. In 1974, a Task Force on Suicides was set up. Further, two studies on suicide were carried out, one concerning young people and the other the middle aged. Finally, a provincial "suicidologist" was appointed in January 1978 to the staff of the Alberta Department of Social Services and Community Health. It is, however, too soon to say if there has been a drop in the suicide rate following these activities.

Quebec prepared a study on violent deaths among its young people in 1977. A 1978 request by the Department of Social Affairs to the University of Montreal resulted in a research team undertaking a review of the literature on suicide. Its purpose was to identify different approaches in the study of suicide, and the methods of intervention in its prevention and reduction. Since 1978, the Department of Social Affairs has subsidized a suicide prevention centre in the School of Psychology at Laval University.

In 1977, Manitoba published a reference document on the incidence of suicide and suicide attempts in that province.

Private Sector

No specific agency or organization is generally recognized as having assumed functional responsibility for the problem of suicide. Only limited, inadequate measures are being taken to reduce its rate.

Among the private agencies helping suicidal persons, crisis intervention centres are probably the best known. Their involvement is, however, usually limited to over-the-telephone counselling and

referral. Some have responded to a particular community's needs by providing other adjuncts, such as a drop-in centre, an information post and/or emergency services (medical, psychiatric, and/or legal services).

In 1978, a national survey of Canadian Crisis Centres, funded by the Department of National Health and Welfare, was carried out.[80] During a three-month period, the participating centres reported receiving 115,130 calls, of which 2,648 (2.3 per cent) were from, or about, suicidal persons. The calls showed an underrepresentation of young and elderly persons, since 84 per cent concerned those between 25 and 64 years of age.

2. Suggested Further Action

The reduction of suicide, regardless of age, will require education, research, and an emphasis upon social values and quality of life. Policies will need to focus upon:

(a) Prevention -- This will include education and research about suicide and its causes, and in the identification of suicidal behaviour.

(b) Intervention -- The development of fast, effective mechanisms to respond to suicidal crises.

(c) Follow-up -- The development of appropriate means to support those who attempt suicide and their families, as well as the bereaved of the victims of suicide.

(a) Prevention

The purpose of this paper is to highlight the kind of issues which must be addressed. All are complex, require intensive study and research, and appropriate professional expertise. In the case of the aged, improvements are needed in respect to: economics,

living arrangements, the availability and accessibility of the health and social services and institutions they require, and in opportunities for involvement in community activities and in employment for those who are able to undertake it and want to do so. Attention to the middle-aged before they retire is essential. They need education about retirement and how to prepare for it. The development of more adequate pension plans is a crucial issue.

It is important to educate the general public about the nature of suicide as a social problem. As part of its continuing work to reduce the incidence of suicide, the International Association for Suicide Prevention, in cooperation with the American Association of Suicidology, has begun a world-wide education program to: acquaint people with the truth about suicide, overcome the misconceptions and aura of mystery that surround it, and provide information regarding the appropriate action to take when suicidal signs are present. To assist media personnel in carrying out the endeavour, a media kit, containing material for a period of one year, has been prepared. It includes editorials, features, news releases, and radio-TV spot announcements of 10 to 60 seconds' duration. Neither this program, nor a comparable one, has yet been introduced in Canada.

More information is needed about the reasons underlying the act of suicide. The limited information provided on the death certificate -- age, sex, marital status, occupation, health status, plus the location, date, and method used by the victim in commiting suicide -- leaves many unanswered questions.

Since every individual reacts differently to the vicissitudes of life, the development of an in-depth profile of suicide victims -- including income, living arrangements, health, family and other social relationships, behavioural patterns, interests, and the like -- is needed. The common denominators, identified by age groupings, would represent the high-risk factors.

(b) Intervention

Crisis intervention centres are either not known or understood by elderly persons or else they do not answer their needs. Perhaps similar centres specifically identified as serving the aged, with personnel trained in understanding and meeting the problems of both non-suicidal and potentially suicidal older persons, would be a more appropriate agency. Some of those trained could be among the aged themselves working either as paid or volunteer staff.

Suicide prevention agencies, including the crisis intervention centres, are staffed mainly by lay volunteers. Persons needing help, including those thinking about committing suicide, are invited to telephone the centre. Offering a distressed individual access to an understanding ear, to whhch troubles can be confided, has proven effective in dissuading many from carrying out some contemplated act, including suicide.

In England, a voluntary organization called the Samaritans introduced a network of suicide prevention centres. These were credited with a decline in the suicide rate. A similar network established in the United States of America did not have the same result. The reason for this, according to observers, was due to the fact that the majority of telephone calls came from individuals needing someone to talk to, rather than from those seriously contemplating suicide.[81] A controlled study, recently conducted in England, showed no significant decline in the suicide rate in cities with a Samaritan branch as opposed to those without.[82] While the earlier claims regarding the reduction in the suicide rate were not confirmed, this in no way denies their usefulness to people facing all kinds of emotional crises. Perhaps their intervention forestalls many in entertaining the idea of suicide.

The infrequent use of crisis intervention centres by the aged suggests that an outreach program might be more efficient for them. Such an outreach program, to borrow from the Alberta Task Force on Suicides, could involve the use of community communications networks to find and help individuals and families desperately in need of someone to listen to their problem before they are driven to a threat, an attempt, or, worse still, an accomplished suicide. Research would have to be done to determine how best to organize such a program. If, however, the principle is agreed upon, a pilot project to test its feasibility and learn something of its probabl impact should be undertaken before full implementation.

(c) Follow-Up

The difficulties in suggesting appropriate and adequate means to support families and individuals in the case of suicide attempts, and the bereaved of suicide victims, arise because of the inadequacies in knowledge regarding the most effective methods of prevention and intervention. Successful development in these methods will lead to good follow-up procedures.

## IV. SUMMARY AND CONCLUSIONS

The purpose of this study has been to examine the data regarding suicide among the aged. The possible high-risk factors related to suicide-prone populations have been explored in order to gain some insight into ways whereby the suicide rate among elderly persons might be reduced.

In 1977, 335 elderly persons committed suicide. Thus, those aged 65 and over, representing about nine per cent of the total population, accounted for 10 per cent of all reported suicides in Canada. By the year 2031, if present trends continue, the aged will represent 20 per cent of the total population and their suicide rate could reach about 21 per cent. In 1977, the suicide rate per 100,000 elderly people was 16.2, compared to 14.3 for the total population and 19.0 for the adult population. Men and women aged 65 to 69 years had a higher rate of suicide than men and women in the total adult (15+) and active (15-64) Canadian populations. Considering that only between one-third to one-half of the actual suicides are believed to be reported, these facts should occasion some alarm.

The elderly male suicide rate is high. Since 1966, it has remained fairly constant. Although lower than that of aged men, the elderly female rate has increased slightly since 1966. The gap between older men and women has not decreased; indeed, the rate for elderly men is more than three times that of elderly women. Marriage seems to be a deterrent against suicide; the suicide rate for those who were married was the lowest for both sexes. Older single men, widowed men, and widowed women are the most vulnerable. Suicide was more common during the period 1966-1977 among those aged persons who resided in Ontario and in Western Canada.

Social isolation, loneliness, ill health, marital status, retirement and income are factors which affect not only the well-being of the aged but influence suicide among them. Improvements to enhance the quality of life of elderly persons could have a positive effect in lowering the rate of suicide among them. Such factors should, therefore, be seriously considered in

the development and implementation of policies for this age group. Finally, it should be remembered that suicide is an important cause of death in the aged. Although it has no one major cause, it is potentially preventable.

## APPENDIX A

Table I

Crude Suicide Rate by Sex, Canada and Regions, 1977
(per 100,000 inhabitants)

| | Male | Female | Total |
|---|---|---|---|
| Canada | 21.2 | 7.3 | 14.3 |
| Atlantic | 14.7 | 3.2 | 9.0 |
| Quebec | 18.3 | 6.5 | 12.3 |
| Ontario | 20.8 | 8.3 | 14.5 |
| Prairies | 27.1 | 7.4 | 17.3 |
| British Columbia | 25.5 | 9.6 | 17.5 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population for the same year.

Table II

Crude Suicide Rate for the Population Aged 15 and Over, by Sex, Canada and Regions, 1977 (per 100,000 inhabitants)

| | Male | Female | Total |
|---|---|---|---|
| Canada | 28.5 | 9.6 | 19.0 |
| Atlantic | 20.7 | 4.5 | 12.6 |
| Quebec | 24.4 | 8.5 | 16.3 |
| Ontario | 27.9 | 10.9 | 19.2 |
| Prairies | 36.9 | 9.9 | 23.5 |
| British Columbia | 33.6 | 12.4 | 22.9 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population for the same year.

Table III

Standardized* Suicide Rate, by Sex and Selected Years, Canada
(per 100,000 inhabitants)

| Year | Male | Female | Total |
|---|---|---|---|
| 1951 | 11.3 | 3.9 | 7.8 |
| 1961 | 12.9 | 3.3 | 8.2 |
| 1966 | 14.1 | 5.0 | 9.6 |
| 1971 | 18.3 | 6.8 | 12.5 |
| 1973 | 18.7 | 7.4 | 13.1 |
| 1975 | 18.2 | 7.0 | 12.6 |
| 1977 | 21.2 | 7.3 | 14.3 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1951-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1951-1977, and Estimates of Population by Sex and Age, 1977.

* Standardized to 1977 Canadian population (male and female separately).

Table IV

Standardized* Suicide Rate for the Population
Aged 15 and Over, by Sex and Selected Years, Canada
(per 100,000 inhabitants)

| Year | Male | Female | Total |
|---|---|---|---|
| 1951 | 15.3 | 5.1 | 10.3 |
| 1961 | 17.2 | 4.3 | 10.9 |
| 1966 | 18.9 | 6.5 | 12.7 |
| 1971 | 24.4 | 8.9 | 16.6 |
| 1973 | 25.0 | 9.8 | 17.3 |
| 1975 | 24.3 | 9.1 | 16.6 |
| 1977 | 28.3 | 9.6 | 18.8 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1951-1975, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1951-1975, and Estimates of Population by Sex and Age, 1977.

* Standardized to 1977 Canadian population (male and female separately).

Table V

Crude Suicide Rate for the Population
Aged 15 to 64, by Sex, Canada and Regions, 1977
(per 100,000 inhabitants)

| | Male | Female | Total |
|---|---|---|---|
| Canada | 28.4 | 9.8 | 19.1 |
| Atlantic | 21.2 | 5.0 | 13.2 |
| Quebec | 25.0 | 9.2 | 17.1 |
| Ontario | 27.3 | 10.6 | 18.9 |
| Prairies | 36.9 | 9.9 | 23.6 |
| British Columbia | 33.3 | 13.0 | 23.2 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population by Sex and Age, 1977.

Table VI

Standardized Suicide Rate for the
Population Aged 15 to 64, by Sex and Selected Years, Canada
(per 100,000 inhabitants)

| Year | Male | Female | Total |
|---|---|---|---|
| 1966 | 18.2 | 6.8 | 12.6 |
| 1969 | 21.7 | 9.1 | 15.4 |
| 1971 | 24.4 | 9.1 | 16.1 |
| 1973 | 24.9 | 9.8 | 17.3 |
| 1975 | 24.2 | 9.3 | 16.8 |
| 1977 | 28.4 | 9.8 | 19.1 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Estimates of Population by Sex and Age, 1977.

Table VII

Standardized Suicide Rate, by Sex and Selected Years, Canada
(per 100,000 inhabitants)

| | Population Aged 65+ | | | Adult Population (15+) | | |
|---|---|---|---|---|---|---|
| Year | Male | Female | Total | Male | Female | Total |
| 1966 | 24.9 | 4.2 | 13.6 | 18.9 | 6.5 | 12.7 |
| 1969 | 27.4 | 6.5 | 16.0 | 22.3 | 8.7 | 15.5 |
| 1971 | 24.7 | 7.2 | 15.1 | 24.4 | 8.9 | 16.6 |
| 1973 | 26.1 | 9.6 | 16.9 | 25.0 | 9.8 | 17.3 |
| 1975 | 25.0 | 7.8 | 15.3 | 24.3 | 9.1 | 16.6 |
| 1977 | 26.9 | 7.8 | 16.2 | 28.3 | 9.6 | 18.8 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Estimates of Population by Sex and Age, 1977.

Table VIII

Crude Suicide Rate for the Population Aged 65 and Over, by Age Group and Sex, Canada, 1977 (per 100,000 inhabitants)

| | Male | | Female | |
|---|---|---|---|---|
| Age Group | Rate | No. of Suicides | Rate | No. of Suicides |
| 65-69 | 29.3 | 103 | 11.1 | 44 |
| 70-74 | 28.2 | 70 | 8.2 | 25 |
| 75-79 | 23.7 | 37 | 5.5* | 12 |
| 80+ | 26.6 | 33 | 4.4* | 2 |
| 80-84 | 21.0* | 18 | 6.4* | 9 |
| 85+ | 25.0* | 15 | 1.8* | 2 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population by Sex and Age, 1977.

* These rates should be interpreted with caution as the number of suicides is small.

Table IX

Crude Suicide Rate for the Population Aged 65 and Over, by Age Group, Canada, 1977 (per 100,000 inhabitants)

| Age Group | Rate | No. of Suicides |
|---|---|---|
| 65-69 | 19.6 | 147 |
| 70-74 | 17.2 | 95 |
| 75-79 | 13.1 | 49 |
| 80-84 | 11.9 | 27 |
| 85+ | 10.0 | 17 |
| 65+ | 16.2 | 335 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population by Sex and Age, 1977.

Table X

Crude Suicide Death Rates for the Population Aged 15 and Over, by Sex and Selected Years, Canada (per 100,000 inhabitants)

| Year and Marital Status | Male | Female | Total |
|---|---|---|---|
| 1966 | | | |
| Single | 19.1 | 4.1 | 12.5 |
| Married | 16.7 | 6.4 | 11.6 |
| Widowed/Divorced | 56.1 | 11.2 | 21.8 |
| 1971 | | | |
| Single | 27.8 | 6.9 | 18.5 |
| Married | 21.1 | 8.6 | 14.9 |
| Widowed/Divorced | 54.9 | 15.3 | 24.7 |
| 1973 | | | |
| Single | 30.6 | 8.9 | 20.9 |
| Married | 19.6 | 8.4 | 14.0 |
| Widowed/Divorced | 68.9 | 18.7 | 30.5 |
| 1975 | | | |
| Single | 30.1 | 9.0 | 20.7 |
| Married | 18.5 | 7.8 | 13.2 |
| Widowed/Divorced | 64.8 | 15.5 | 26.9 |
| 1977 | | | |
| Single | 38.7 | 10.8 | 26.2 |
| Married | 20.0 | 7.7 | 13.8 |
| Widowed/Divorced | 71.0 | 15.7 | 28.8 |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Estimates of Population by Sex and Age, 1977.

Table XI

Crude Suicide Death Rates for the Population Aged 65 and Over, by Sex and Selected Years, Canada (per 100,000 inhabitants)

| Year and Marital Status | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| 1966 | | | | | | |
| Single | 31.5 | (25)* | 3.5** | (3) | 17.0 | (28) |
| Married | 19.4 | (96) | 3.7** | (12) | 13.2 | (108) |
| Widowed/Divorced | 39.4 | (56) | 4.8 | (20) | 13.6 | (76) |
| 1971 | | | | | | |
| Single | 44.6 | (37) | 7.7** | (8) | 24.2 | (45) |
| Married | 18.5 | (104) | 7.9 | (30) | 14.2 | (134) |
| Widowed/Divorced | 37.1 | (51) | 6.6 | (32) | 13.3 | (83) |
| 1973 | | | | | | |
| Single | 43.4 | (36) | 11.1** | (12) | 25.2 | (48) |
| Married | 17.9 | (106) | 6.7 | (27) | 13.4 | (133) |
| Widowed/Divorced | 48.0 | (67) | 11.4 | (59) | 19.2 | (126) |
| 1975 | | | | | | |
| Single | 33.6 | (28) | 7.1** | (8) | 18.4 | (36) |
| Married | 21.5 | (135) | 7.3 | (31) | 15.8 | (166) |
| Widowed/Divorced | 33.0 | (47) | 8.3 | (46) | 13.4 | (93) |
| 1977 | | | | | | |
| Single | 51.1 | (43) | 7.5** | (9) | 25.6 | (52) |
| Married | 18.9 | (127) | 6.3 | (29) | 13.8 | (156) |
| Widowed/Divorced | 48.3 | (71) | 8.9 | (53) | 16.7 | (124) |

Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Estimates of Population by Sex and Age, 1977.

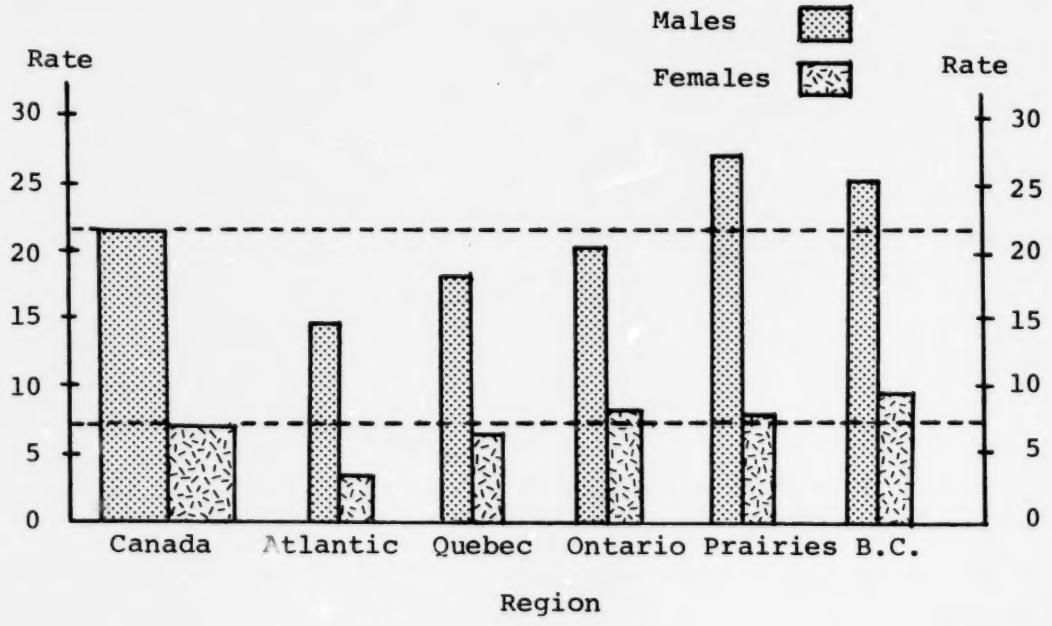
* Actual number of suicides in parentheses.

** These rates should be interpreted with caution as the number of suicides is small.

## APPENDIX B

### Chart 6

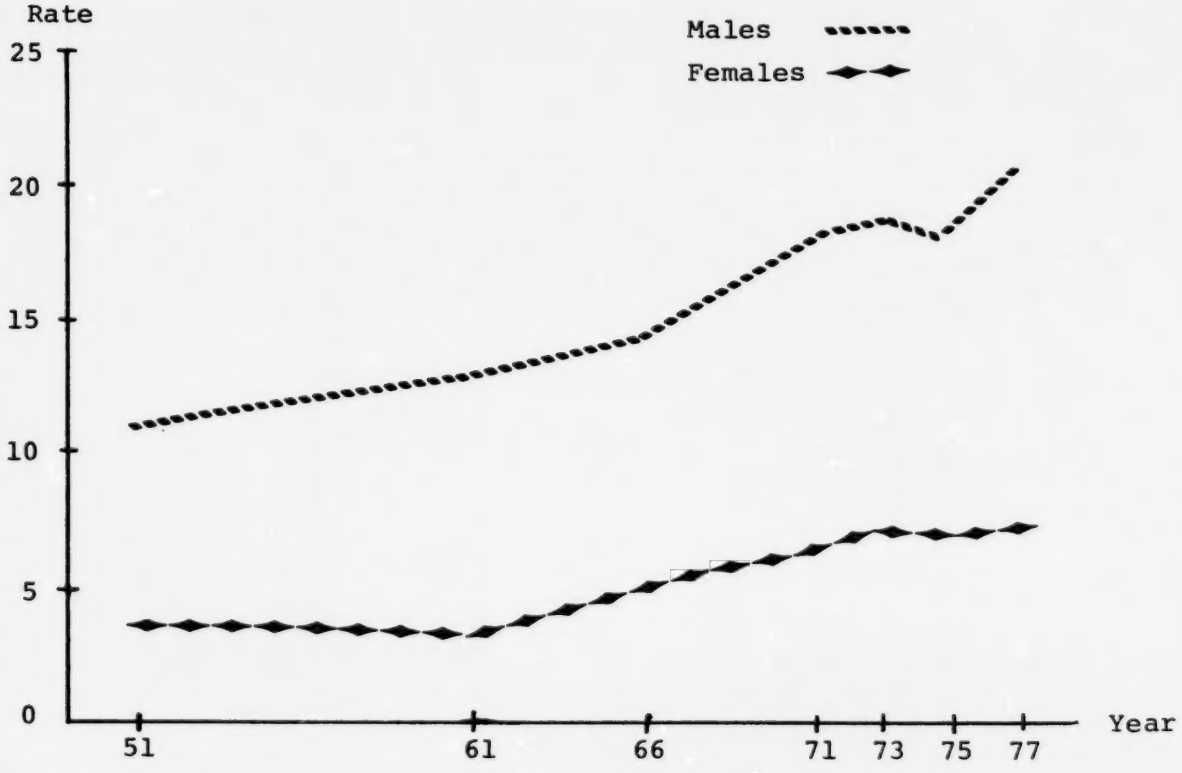
Crude Suicide Rate by Sex, Canada and Regions, 1977
(per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1977, and Statistics Canada Estimates of Population by Sex and Age, 1977.

Chart 7

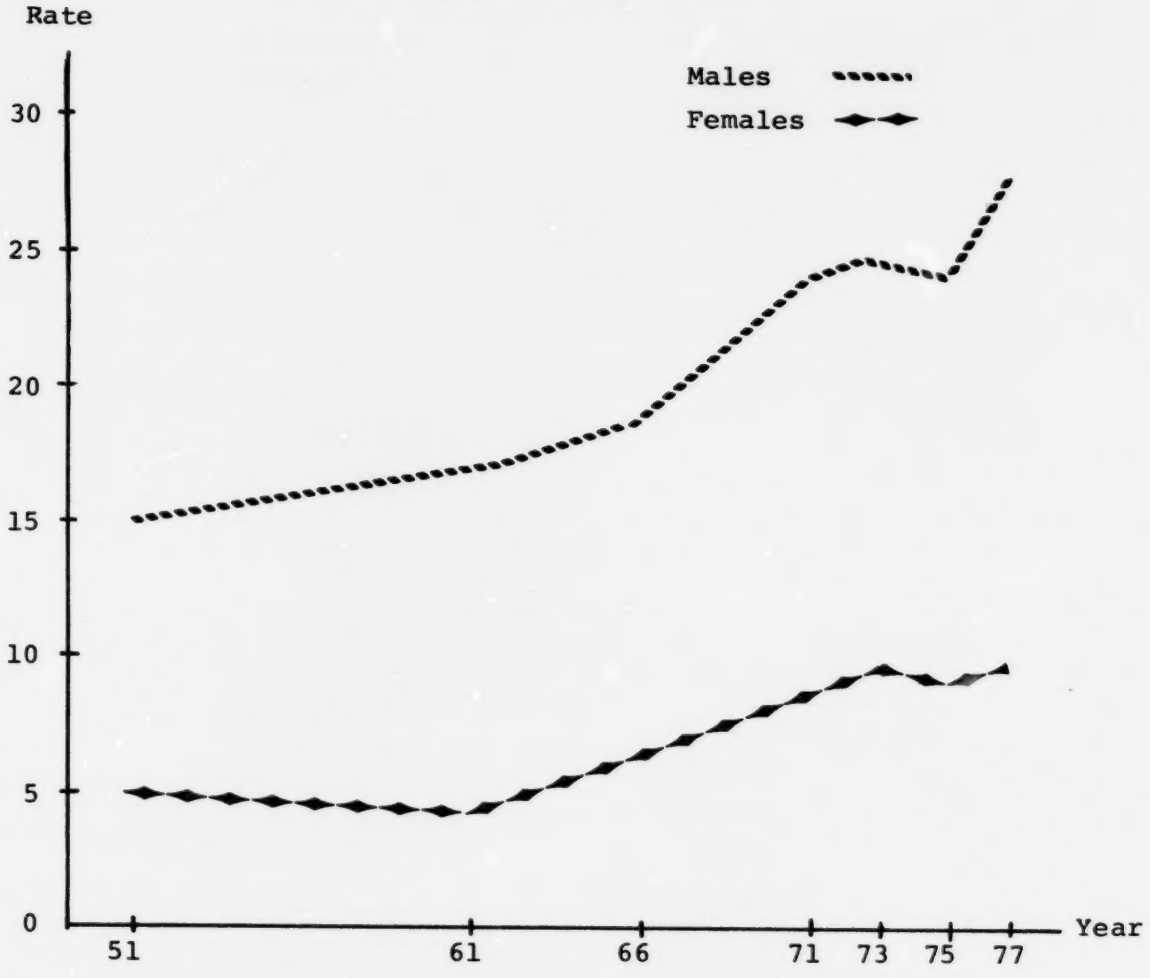
Standardized Suicide Rate, by Sex and Selected Years, Canada
(per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1951-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1951-1975, and Estimates of Population by Sex and Age, 1977.

Chart 8

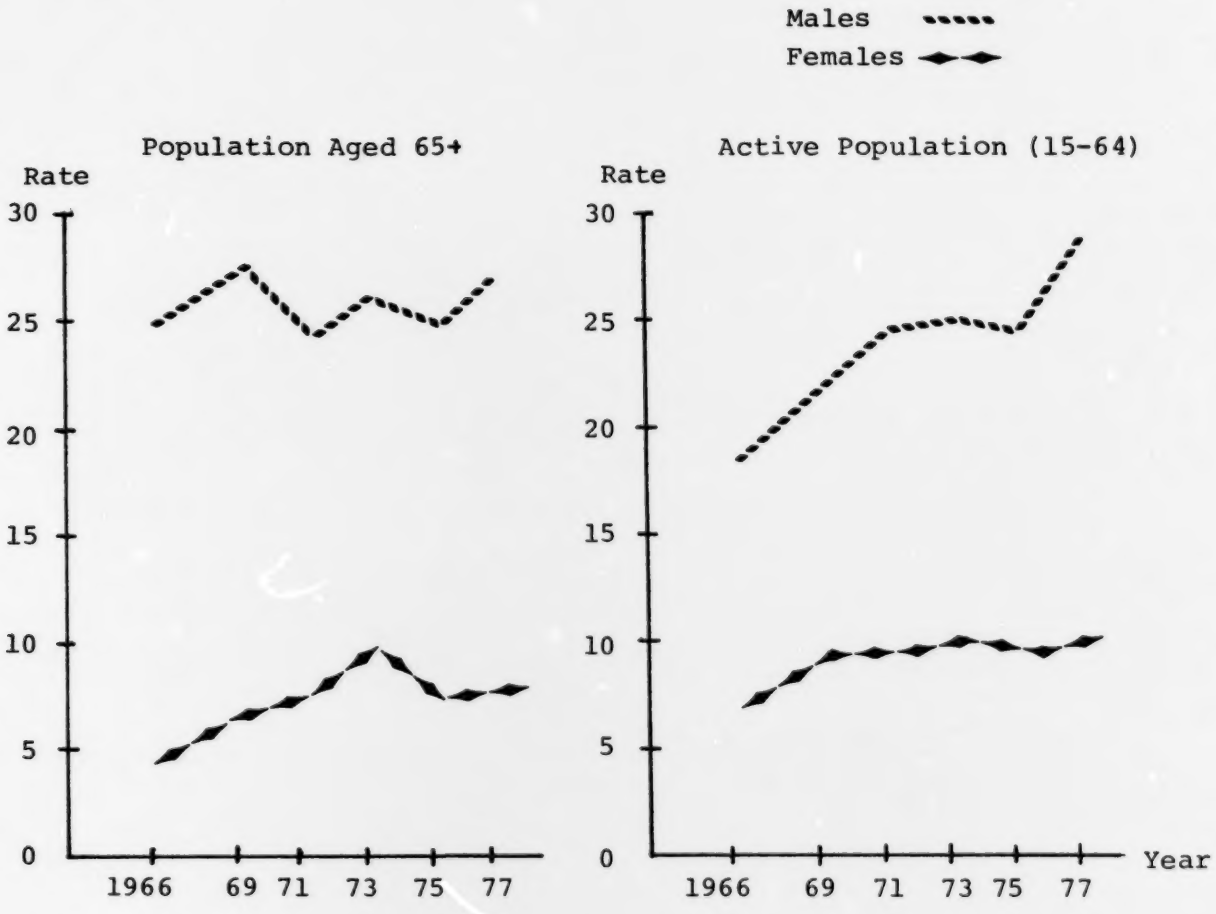
Standardized Suicide Rate for the Population
Aged 15 and Over, by Sex and Selected Years, Canada
(per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada, based on Statistics Canada Vital Statistics, 1951-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1951-1975, and Estimates of Population by Sex and Age, 1977.

Chart 9

Comparison of the Standardized* Suicide Rate for Different Populations, by Sex and Selected Years, Canada (per 100,000 inhabitants)




Source: Rates calculated by Health and Welfare Canada based on Statistics Canada Vital Statistics, 1966-1977, Statistics Canada Revised Annual Estimates of Population by Sex and Age, 1966-1975, and Statistics Canada Estimates of Population by Sex and Age, 1977.

* Standardized to 1977 population within each age group.

## REFERENCES


1 United Nations, Demographic Yearbook, 1977, New York, 1978, p. 428.

2 Ouellet, Barbara L., Health Field Indicators -- Canada and Provinces, Ottawa, Health and Social Policy Directorate, Policy, Planning and Information Branch, Department of National Health and Welfare, September 1979, p. 21.

Potential Years of Life Lost between ages one and 70 (PYLL) is a very useful indicator of premature death in that heavier "weight" is given to deaths at younger ages. The method of calculating PYLL involves summing -- over all age groups between one and 70 — the number of deaths in a specific age group, multiplied by the remaining years of life up to age 70. Thus, a death at age 40 would contribute 30 years to the total potential life years lost during a particular year.

3 Powell, Brian J., and Martin, James K., Economic Implications of an Aging Society in Canada, Policy Research and Strategic Planning Branch, Health and Welfare Canada (paper prepared for the National Symposium on Aging, October 25-27, 1978), p. 5.

The population projections come from Statistics Projection No. 3. They are based on assumptions which reflect current discussions as follows:
(a) a total fertility rate equal to 1.9 in 1976, declining to 1.7 in 1991 (constant thereafter);
(b) the average length of life rising until 1986 and reaching 70.2 for men and 78.3 for women (constant thereafter); and
(c) a rate of net immigration equal to 75,000 per year.

4 Durkheim, Emile, Suicide, New York, The Free Press, 1951, p. 44.

5 Statistics Canada, Suicide Mortality, 1950-1968, Catalogue No. 84-528, Occasional, November 1972.

6 Statistics Canada, Canada's Elderly, Catalogue No. 98-800E, 1979, p. 23.

7 Dublin, L.I., Suicide: A Sociological and Statistical Study, New York, Ronald Press, 1963.

8 Solomon, Mark, and Boldt, Menno, Interim Report on Suicide, Phase One: Youth Suicide, Alberta, Department of Social Services and Community Health, p. 3.

9 Douglas, Jack D., The Social Meanings of Suicide, Princeton, New Jersey, Princeton University Press, 1967, p. 203.

10 Maris, Donald, "Sociology", in Perlin, Seymour (ed.), A Handbook for the Study of Suicide, Toronto, Oxford University Press, 1975, p. 95.

11 Durkheim, op. cit., p. 209.

12 Henry, Andrew F., and Short, James F., Jr., Suicide and Homicide, New York, The Free Press of Glencoe, 1954, p. 56.

13 Maris, op. cit., p. 102.

According to Maris, "external restraint" includes the notions of vertical restraint ("restraint deriving from one's subordinate position in a status hierarchy") and horizontal restraint ("restraint deriving from the degree of relational involvement with others"). Strong "internal restraint" is associated with self-oriented aggression.

14 In Maris, op. cit., p. 97.

Status integration means the frequency with which a particular status configuration is occupied. The greater the frequency of occupation, the higher the status integration and the lower the suicide rate.

15 Sainsbury, Peter, Suicide in London, London, The Institute of Psychiatry, 1955, p. 80.

16 Breed, Warren, "Suicidal and Loss in Social Interaction", in Schneidman, Edwin S. (ed.), Essays in Self-Destruction, New York, Science House, Inc., 1967, p. 195.

17 Berardo, Felix M., "Survivorship and Social Isolation: The Case of the Aged Widower", in The Family Coordinator, Vol. 19, No. 1, January 1970, p. 15.

18 Durkheim, op. cit., p. 209.

19 Henry and Short, op. cit., p. 56.

20 Gibbs, Jack P., and Martin, Walter T., Status, Integration and Suicide, Eugene, Oregon, University of Oregon Books, 1964, p. 17.

21 Breed, op. cit., p. 195.

22 Sutkamp Freidman, J., "Cry for Help: Suicide in the Aged", in Journal of Gerontological Nursing, Vol. 2, No. 3, p. 30.

23 Robins, Lee N., et al., "The High Rate of Suicide in Older White Men: A Study Testing Ten Hypotheses", in Social Psychiatry, Vol. 12, No. 1, p. 6.

24 Berardo, Felix M., op. cit., p. 15.

25 Leonard, Calista, Understanding and Preventing Suicide, p. 254.

26 Statistics Canada, Canada's Elderly, Catalogue No. 98-800E, 1979, p. 23.

27 Ciffin, S., Martin, J.K., and Talbot, C., Retirement in Canada, Policy Research and Long Range Planning (Welfare), Health and Welfare Canada, Staff Working Paper No. 7604, December 1976, p. 9.

28 Laury, G.V., "Some Reflections on Aging in the United States", in Geriatrics, Vol. 28, No. 5, May 1973, p. 180.

29 Adams, O.B., et Lefebvre, L.A., La retraite et la mortalité, Statistique Canada, Catalogue 83-521F, juin 1980, p. 19.

30 Sainsbury, P., "Suicide and Depression", in Coppen, A., and Walk, A. (eds.), Recent Developments in Affective Disorders, Ashford, Kent, Headley Brothers, 1968.

31 Durkheim, Emile, op. cit., p. 259.

32 Parsons, Talcott, "The Social Structure of the Family", in Anshen, Ruth N. (ed.), The Family: Its Function and Destiny, New York, Harper, 1959, pp. 241-274.

33 Berardo, Felix M., p. 22.

34 Killian, B.A., "Attitudes to Death and Bereavement Among the Elderly", in World of Irish Nursing, Vol. 7, No. 5, May 1978, p. 2.

35 Bock, E. Wilbur, "Aging and Suicide: The Significance of Marital Kinship, and Alternative Relations", in The Family Coordinator, Vol. 21, No. 1, January 1972, p. 75.

36 McMahon, B., and Pugh, T.F., "Suicide in the Widowed", in American Journal of Epidemiology, Vol. 81, 1965, pp. 23-31.

37 Cavan, Ruth, "Self and Role Adjustments During Old Age", in Rose, Arnold M. (ed.), Human Behavior and Social Process: An Interactionist Approach, Boston, Houghton Mifflin, 1967, pp. 526-536.

38 Bock, op. cit., p. 75.

39 Berardo, Felix M., "Widowhood Status in the United States: Perspective on a Neglected Aspect of the Family Life-Cycle", in The Family Coordinator, No. 17, 1968, pp. 191-203.

40 Breed, Warren, "Occupational Mobility and Suicide Among White Males", in American Sociological Review, Vol. 28, 1963, pp. 179-188.

41 Maris, Ronald W., "Suicide, Status, and Mobility in Chicago", in Social Forces, Vol. 46, 1967, pp. 246-256.

42 Maris, Ronald W., Social Forces in Urban Suicide, Homewood, Illinois, Dorsey Press, 1969a.

43 Durkheim, op. cit., p. 241.

44 Henry and Short, op. cit.,

45 Berardo, op. cit., p. 12.

46 Farber, Maurice L., Theory of Suicide, New York, Funk and Wagnalls, 1968, p. 16.

47 Resnik, H.L.P., and Cantor, Joel M., "Suicide and Aging", in Journal of the American Geriatrics Society, Vol. 18, No. 2, 1970, p. 157.

48 Ripley, Herbert S., "Suicide in General Hospital", in The Western Journal of Medicine, Vol. 130, No. 5, May 1979, p. 410.

49 Marshall, James R., "Changes in Aged White Male Suicide, 1948-1972", in Journal of Gerontology, Vol. 33, No. 5, 1978, pp. 764-765.

50 Sendbuehler, J.M., and Goldstein, S., "Attempted Suicide Among the Aged", in Journal of the American Geriatrics Society, Vol. XXV, No. 6, 1977, p. 247.

51 Benson, Roger A., and Brodie, Donald C., "Suicide by Overdose of Medicines Among the Aged", in Journal of the American Geriatrics Society, Vol. XXIII, No. 7, 1975, p. 307.

52 Marshall, op. cit., p. 764.

53 Williams, Robert H., "The End of Life in the Elderly", in Postgraduate Medicine, Vol. 54, No. 6, December 1973, pp. 55-56.

54 Resnik, et al., "Suicide and Aging", p. 155.

55 Batchelor, I.R.C., and Napier, M.B., "Attempted Suicide in Old Age", in British Medical Journal, Vol. 2, 1953, p. 1186.

56 Burston, G.R., "Self-Poisoning in Elderly Patients", in Gerontologia Clinica, Vol. 11, No. 5, 1969, p. 279.

57 Dorpal, T.L., and Ripley, H.S., "The Relationship Between Attempted Suicide and Completed Suicide", in Comparative Psychiatry, Vol. 8, p. 74.

58 Gardner, E.A., Bahn, A.K., and Mack, M., "Suicide and Psychiatric Care in the Ageing", in Archives of General Psychiatry, Vol. 10, June 1964, p. 547.

59 O'Neal, P., Robins, E., and Schmidt, E.H., "A Psychiatric Study of Attempted Suicide in Persons Over Sixty Years of Age" in Archives of General Psychiatry, Vol. 75, 1956, p. 275.

60 Sainsbury, P., "Suicide in Later Life", in Gerontologia Clinica, Vol. 4, 1962, p. 161.

61 Williams, Robert H., op. cit., p. 56.

62 Walker, Charlie, and McWhinnie, John, A Composite Picture of the Disabled in Canada, Ottawa, Health and Welfare Canada, April 1980, p. 14.

63 Tideiksaar, Rein, "Suicide in the Elderly", in American Family Physician, Vol. 19, No. 3, 1979, p. 28.

64 Leonard, Calista V., op. cit., p. 229.

65 Bennett, A.E., "The Physician's Responsibility in the Prevention of Suicides", in Disease of the Nervous System, Vol. 15, 1954, p. 207.

66 Shulman, Kenneth, "Suicide and Parasuicide in Old Age: A Review", in Age and Aging, Vol. 7, No. 4, 1978, p. 204.

67 Blumenthal, H.T., Medical and Clinical Aspects of Aging, New York, Columbia University Press, 1962.

68 Farberow, N.L., and Schneidman, E.S., The Cry for Help, New York, Random House, 1933.

69 Levin, S., "Depression in the Aged -- A Study of the Salient External Factors", in Selected Papers from the First Annual Symposium on Old Age, Cushing Hospital, Framingham, Mass., May 1962, in Geriatrics, No. 18, 1963, p. 382.

70 Busse, E.W., and Pfeiffer, E., "Functional Psychiatric Disorders in Old Age", in Behaviour and Adaptation in Late Life, Boston, Little, Brown, and Company, 1969, pp. 183-235.

71 Mehta, Dinest, et al., "Suicide Pact in a Depressed Couple: Case Report", in Journal of the American Geriatrics Society, Vol. 26, No. 3, 1978, p. 136.

72 Bolland, Peter, in article entitled, "Depression Major Concern for Elderly in Institutions", in The Ottawa Citizen, issue of May 24, 1979.

73 Fann, William E., and Wheless, Jeanine C., "Depression in Elderly Patients", in Southern Medical Journal, Vol. 68, No. 4, April 1975, p. 468.

74 Poulos, Jean, "The Geriatric Suicide", in Bedside Nurse, Vol. 4, No. 7, July 1971, p. 26.

75 Fann, William, et al., op. cit., p. 469.

76 Mulder, D.W., "Organic Brain Syndromes Associated with Disease in Unknown Cause", in Freedman, A., et al. (eds.), Comprehensive Textbook of Psychiatry -- II, Baltimore, Williams and Williams Co., Vol. 1, 1975.

77 Graux, P., "Le suicide de la personne âgée", dans Lille Medical, Vol. 19, no 7, 1974, p. 754.

78 Sendbuehler, J.M., and Goldstein, S., op. cit., p. 247.

79 Shichor, David, and Bergman, Simon, "Patterns of Suicide Among the Elderly in Israel", in The Gerontologist, Vol. 19, No. 5, 1979, p. 492.

80 Syer, Diane, and Scott, Shirley, A National Survey of Canadian Crisis Centres (Report on the Survey), 1978, 17 p.

81 Hendin, Herbert, "A Saver Policy on Suicide", in Psychology Today, May 1979, pp. 115-116.

82 Jennings, C., Barraclough, B.M., and Moss, J.R., "Have the Samaritans Lowered the Suicide Rate -- A Controlled Study", in Psychological Medicine, Vol. 8, 1978, pp. 413-422.

## BIBLIOGRAPHY

Adams, O.B., et Lefebvre, L.A., La retraite et la mortalité - Examen de la mortalité chez un groupe de retraités canadiens, Ottawa, Statistique Canada, 1980, 33 p.

Ariès, Philippe, Essai sur la mort en Occident, Collection Point, Paris, Seuil, 1975, 237 p.

-----, L'homme devant la mort, Paris, Editions du Seuil, 1977, 641 p.

Arndt, Seifert, "A Theory of Projects: Its Application to Death and Suicide", in Philosophy and Phenomenology Research, Vol. 39, No. 2, December 1978, pp. 208-218.

Aron, Raymond, Les étapes de la pensée sociologique, Paris, Gallimard, 1967, 659 p.

Atkinson, Maxwell, "The Samaritans and the Elderly: Some Problems in Communication Between a Suicide Prevention Scheme and a Group with a High Suicide Rate", in Social Science and Medicine, Vol. 5, No. 5, 1971, pp. 483-490.

Aubry, Huguette, "La fréquence du suicide tardif chez les anciens patients psychiatriques", dans Archives Suisses de Neurochirurgie et de Psychiatrie, vol. 114, fascicule 2, 1974, pp. 303-337.

Barraclough, B.M., and Pallis, D.J., "Depression Followed by Suicide: A Comparison of Depressed Suicides with Living Depressives", in Psychological Medicine, Vol. 5, No. 1, 1975, pp. 55-61.

Barraclough, B.M., and Shepherd, D.M., "Birthday Blues: The Association of Birthday with Self-Inflicted Death in the Elderly", in Acta Psychiatrica Scandinavica, Vol. 54, No. 2, 1976, pp. 146-149.

Bazas, T., et al., "Incidence and Seasonal Variation of Suicide in Greece", in Comprehensive Psychiatry, Vol. 20, No. 1, January/February 1979, pp. 15-19.

Bean, Philip, "Accidental and Intentional Self-Poisoning in the Over-60 Age Group", in Gerontologia Clinica, Vol. 15, No. 5, 1973, pp. 259-267.

de Beauvoir, Simone, La vieillesse, Paris, Gallimard, 1970, 604 p.

Beck, Aaron T., and Kovacs, Maria, "Assessment of Suicidal Intention: The Scale for Suicide Ideation", in Journal of Consulting and Clinical Psychology, Vol. 47, No. 2, 1979, pp. 343-352.

Beck, Roy W., Morris, Jeffrey, and Lester, David, "Suicide Notes and Risk of Future Suicide", in Journal of the American Medical Association, Vol. 228, No. 4, April 1974, pp. 495-496.

Bendkowski, B., "Sudden Unexpected Death in the Elderly", in Journal of the American Geriatrics Society, Vol. 21, No. 9, 1973, pp. 405-408.

Bennett, A.E., "Recognizing the Potential Suicide", in Geriatrics, Vol. 22, No. 5, May 1967, pp. 175-181.

Benson, Roger A., and Brodie, Donald C., "Suicide by Overdoses of Medicines Among the Aged", in Journal of the American Geriatrics Society, Vol. XXIII, No. 7, 1975, pp. 304-308.

Berardo, Felix M., "Widowhood Status in the United States: Perspective on a Neglected Aspect of the Family Life-Cycle", in The Family Coordinator, Vol. 17, 1968, pp. 191-203.

-----, "Survivorship and Social Isolation", in The Family Coordinator, Vol. 19, No. 1, January 1970, pp. 11-25.

Billette, André, et Hill, Gerry B., "Risque relatif de mortalité masculine et les classes sociales au Canada -- 1974", dans L'Union Médicale, tome 107, no 6, juin 1978.

Blix, Susanne, and Hendrie, Hugh C., "Depression in the Elderly", in Journal of the Indiana State Medical Association, October 1978, pp. 983-987.

Blue, William W., "Suicide and Attempted Suicide Among the Aged", in Canadian Medical Association Journal, Vol. 117, No. 11, December 1977, p. 1250.

Bock, E. Wilbur, "Aging and Suicide: The Significance of Marital Kinship, and Alternative Relations", in The Family Coordinator, Vol. 21, No. 1, January 1972, pp. 71-79.

Bock, E. Wilbur, and Webber, Irwing L., "Social Status and Relational System of Elderly Suicides: A Reexamination of the Henry-Short Thesis", in Life-Threatening Behavior, Vol. 2, No. 3, Fall 1972, pp. 145-159.

-----, "Suicide Among the Elderly: Isolating Widowhood and Mitigating Alternatives", in Journal of Marriage and the Family, Vol. 34, No. 1, February 1972, pp. 24-31.

Bolland, Peter, "Depression Major Concern for Elderly in Institutions", news dispatch in The Ottawa Citizen, issue of May 24, 1979.

Breed, Warren, "Occupational Mobility and Suicide Among White Males", in American Sociological Review, Vol. 28, No. 2, April 1963.

Brooke, Eileen M. (ed.), Suicide and Attempted Suicide, Geneva, World Health Organization, Public Health Paper No. 58, 1974, 127 p.

Brown, J.H., "Reporting of Suicide: Canadian Statistics", in Suicide, Vol. 5, No. 1, Spring 1975, pp. 21-29.

Burston, G.R., "Self-Poisoning in Elderly Patients", in Gerontologia Clinica, Vol. 11, No. 5, 1969, pp. 279-289.

Butler, G.C., "Incidence of Suicide Among the Ethnic Groups of the Northwest Territories and Yukon Territory", in Medical Services Journal, Vol. 21, No. 4, April 1965, pp. 252-256.

Butler, Robert N., "Mental Health and Aging Life Cycle Perspectives", in Geriatrics, Vol. 29, No. 11, 1974, pp. 59-60.

Cahn, C.H., "Suicide and the Attempted Suicide Among the Aged", in Canadian Medical Association Journal, Vol. 117, No. 10, November 1977, p. 1136.

Cameron, Paul, "Suicide and the Generation Gap,", in Life-Threatening Behavior, Vol. 2, No. 3, Fall 1972, pp. 194-208.

Canada, Health and Welfare Canada, Basic Facts on Public Retirement Income Programs, Policy Research and Strategic Planning, Occasional Paper No. 3, July 1978, 17 p.

-----, Expanding the Horizon of the New Horizons Program, Paper No. IV, Survey Research and Special Unit, July 1978, 43 p.

-----, Retirement Age (background paper to the Brief presented to the Special Senate Committee on Retirement Age Policies by the Minister of National Health and Welfare), revised April 1979, 145 p.

-----, Retirement in Canada: Summary Report, Policy Research and Long Range Planning, Staff Working Paper No. 7604, 1976, 47 p.

-----, Socio-Economic Policies for Elderly Persons in Canada (paper presented for the Organization for Economic Cooperation and Development), Policy, Planning and Information Branch, Ottawa, May 1979.

-----, The Incomes of Elderly Canadians in 1977, Social Security Report, Policy, Planning and Information Branch, January 1980.

Canada, Interdepartmental Committee on Social Indicators, Task Force on Aging: A Review of Data Sources and Priorities, Summary Report, December 1979, 115 p.

Canada, Statistics Canada, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1966, Catalogue No. 84-203, Annual.

-----, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1969, Catalogue No. 84-203, Annual, October 1971.

-----, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1971, Catalogue No. 84-203, Annual, November 1972.

-----, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1973, Catalogue No. 84-203, Annual, December 1974.

-----, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1975, Catalogue No. 84-203, Annual, March 1978.

-----, Causes of Death, Provinces by Sex and Canada by Sex and Age, 1977, Catalogue No. 84-203, Annual, unpublished data.

-----, Labour Force Annual Averages, 1975-1978, Catalogue No. 71-529, Occasional, February 1979.

-----, Population Estimates by Marital Status, Age and Sex, for Canada and Provinces, 1967, Catalogue No. 91-203, Annual, June 1969.

-----, Population 1921-1971, Revised Annual Estimates of Population, by Sex and Age Group, Canada and the Provinces, Catalogue 91-512, Occasional, July 1973.

-----, Population 1971-1976, Revised Annual Estimates of Population, by Sex and Age for Canada and the Provinces, Catalogue No. 91-518, Occasional, March 1979.

-----, Estimates of Population by Sex and Age for Canada and the Provinces, June 1, 1977, Catalogue No. 91-202, Annual, November 1978.

-----, Final Postcensal Estimates of the Population by Sex and Age, Canada and Provinces, June 1, 1977, unpublished data.

-----, Revised Annual Estimates of Population by Marital Status, Age and Sex for Canada and the Provinces, 1971-1976, Catalogue No. 91-519, Occasional, July 1979.

-----, Estimates of Population by Marital Status, Age and Sex for Canada and the Provinces, June 1977, unpublished data.

-----, Vital Statistics, 1951, December 1953.

-----, Vital Statistics, 1961, August 1963.

-----, Vital Statistics, 1966, September 1968.

-----, Vital Statistics, 1971, Vol. III, Catalogue No. 84-206, Annual.

-----, Vital Statistics, 1973, Vol. III, Catalogue No. 84-206, Annual.

-----, Vital Statistics, 1975, Vol. III, Catalogue No. 84-206, Annual.

-----, Vital Statistics, 1977, Vol. III, Catalogue No. 84-206, Annual.

Ciompi, L., "Suicide et tentatives de suicide dans la vieillesse", dans Revue médicale de la Suisse romande, vol. 86, no 4, avril 1966, pp. 260-262.

Ciompi, Luc, "Late Suicide in Former Mental Patients", in Psychiatria Clinica, Vol. 9, No. 1, 1976, pp. 59-63.

Clopto, James R., and Baucom, Donald H., "MMPI Ratings of Suicide Risk", in Journal of Personality Assessment, Vol. 43, No. 3, 1979, pp. 293-296.

Cohen, Gene D., "Approach to the Geriatric Patient", in Medical Clinics of North America, Vol. 61, No. 4, July 1977, pp. 855-866.

Collishaw, Neil C., Suicide in Canada, Ottawa, Health and Welfare Canada, October 1977.

Danigelis, Nick, and Pope, Whitney, "Durkheim's Theory of Suicide as Applied to the Family: An Empirical Test", in Social Forces, Vol. 57, No. 4, June 1979, pp. 1081-1106.

Day, George, "Samaritans Versus Suicide", in British Medical Journal, Vol. 2, No. 6195, October 1979, p. 935.

de Vries, André, and Cormi, Amnon (eds.), The Dying Human, Ramat Gan, Irsael, Turtledove Publishing, 1979, 491 p.

Dominian, J., "Marital Pathology -- A Review", in Postgraduate Medical Journal, Vol. 48, September 1972, pp. 517-525.

Douglas, Jack D., The Social Meanings of Suicide, Princeton, N.J., Princeton University Press, 1967, 398 p.

Durkheim, Emile, Le suicide, Paris, Presses Universitaires de France, 1930, 463 p.

Dwyer, Philip M., "An Inquiry into the Psychological Dimensions of Cult Suicide", in Suicide and Life-Threatening Behavior, Vol. 9, No. 2, Summer 1979, pp. 120-127.

Easterlin, Richard A., "What Will 1984 Be Like? Socioeconomic Implications of Recent Twists in Age Structure", in Demography, Vol. 15, No. 4, November 1978, pp. 397-432.

Elwood, Thomas W., "Old Age and Quality of Life", in Health Services Reports, Vol. 87, No. 10, December 1972, pp. 919-931.

Etemad, Bijan, "Aging", in Current Psychiatric Therapies, Vol. 8, 1978, pp. 85-89.

Fann, William E., and Wheless, Jeanine C., "Depression in Elderly Patients", in Southern Medical Journal, Vol. 68, No. 4, April 1975, p. 468.

Farber, Maurice L., Theory of Suicide, New York, Funk and Wagnalls, 1968, 115 p.

Farberow, Norman L. (ed.), Suicide in Different Cultures, Baltimore, University Park Press, 1975, 286 p.

Farberow, Norman L., and Moriwaki, Sharon Y., "Self-Destructive Crises in the Older Person", in The Gerontologist, Vol. 15, No. 4, August 1975, pp. 333-337.

Farberow, Norman, and Shneidman, Edwin S., The Cry for Help, Toronto, McGraw-Hill Book Company, 1965, 398 p.

Flett, Darlene E., Last, John M., and Lynch, George W., Evaluation of the Public Health Nurse as Primary Health Care Provider for Elderly People, Health and Welfare Canada, Long Range Planning Branch, Staff Paper No. 78-2, June 1978, 22 p.

Fox, Richard, "Suicide Prevention in Great Britain", in Mental Health and Society, Vol. 4, 1977, pp. 74-79.

Gardner, Elmer A., Bahn, Anita K., and Mack, Marjorie, "Suicide and Psychiatric Care in the Aging", in Archives of General Psychiatry, Vol. 10, June 1964, pp. 547-553.

Gerry, Peggy, "J'ai chosi ma mort", dans Psychologie, no 105, octobre 1978, pp. 33-39.

Gfeller, Eduard, "Pinpointing the Cause of Disturbed Behavior in the Elderly", in Geriatrics, Vol. 33, No. 12, December 1978, pp. 26-30.

Gibbs, Jack P., and Martin, Walter T., Status Integration and Suicide, Eugene, Oregon, University of Oregon Books, 1964, 225 p.

Ginsberg, R.B., "Anomie and Aspirations: A Reinterpretation of Durkheim's Theory", in Dissertation Abstracts International, Vol. 27A, 1966.

Graux, P., "Le suicide de la personne âgée", dans Lille Médical, tome XIX, no 7, 1974, pp. 754-755.

Haggerty, Judith, "Suicidal Behavior in a 70-Year-Old Man: A Case Report", in Journal of Geriatric Psychiatry, Vol. VI, No. 1, 1973, pp. 43-52.

Halbwachs, Maurice, The Causes of Suicide, London, Routledge and Kegan Paul, 1978, 372 p.

Hankoff, L.D. (ed.), and Einsidler, Bernice (assoc. ed.), Suicide -- Theory and Clinical Aspects, Littleton, Mass., PSG Publishing Company, Inc., 1979, 464 p.

Heinz, Linda, "Annotated Bibliography of 'Suicide'", in Suicide and Life-Threatening Behavior, Vol. 8, No. 4, 1978, p. 257.

Hendin, Herbert, "A Saner Policy on Suicide", in Psychology Today, May 1979, pp. 115-116.

Henretta, John C., and Campbell, Richard T., "Status Attainment and Status Maintenance: A Study of Stratification in Old Age", in American Sociological Review, Vol. 41, December 1976, pp. 981-992.

Henry, A.F., and Short, J.F., Suicide and Homicide, Glencoe, Glencoe Free Press, 1954, 214 p.

Iga, Mamoru, et al., "Suicide in Japan", in Social Science and Medicine, Vol. 12A, Perganon Press Ltd., 1978, pp. 507-516.

Jacobson, Gerald F., and Portuges, Stephen H., "Relation of Marital Separation and Divorce to Suicide: A Report", in Suicide and Life-Threatening Behavior, Vol. 8, No. 4, Winter 1978, pp. 217-224.

Jankélévitch, Vladimir, La Mort, Paris, Flammarion, 1966, 426 p.

Jarosz, Maria, "Le suicide en Pologne", dans La Revue d'études comparatives Est-Ouest, Vol. 9, no 4, décembre 1978.

Jarvis, George K., The Probability of Suicide: Identification of Canadian Population Segments at High Risk, Edmonton, University of Alberta, 1975, 19 p.

-----, Status Integration and Self-Injury, Edmonton, University of Alberta, 1976, 16 p.

Jennings, C., Barraclough, B.M., and Moss, J.R., "Have the Samaritans Lowered the Suicide Rate? A Controlled Study", in Psychological Medicine, Vol. 8, 1978, pp. 413-422.

Johnson, Allan, "Recent Trends in Sex Mortality Differentials in the United States", in Journal of Human Stress, Vol. 3, No. 1, March 1977, pp. 22-32.

Kahana, Ralph, and Levin, Sidney, "Aging and the Conflict of Generation", in Journal of Geriatric Psychiatry, Vol. IV, No. 2, Spring 1971, pp. 115-162.

Kastenbaum, Robert, and Mishara, Brian L., "Premature Death and Self-Injurious Behavior in Old Age", in Geriatrics, Vol. 26, No. 7, July 1971, pp. 71-81.

Khantzian, Edward J., "Organic Problems in the Aged: Brain Syndromes and Alcoholism", in Journal of Geriatric Psychiatry, Vol. 11, No. 2, 1978, pp. 191-202.

Kiev, Ari, "The Prevention of Suicide", in Current Psychiatric Therapies, Vol. 18, 1978, pp. 91-95.

Killian, Bridget Anne, "Attitudes to Death and Bereavement Among the Elderly", in World of Irish Nursing, Vol. 7, No. 5, May 1978, pp. 2-3.

Kraus, A.S., "Patients Who Want to Die: A Survey of 1,000 Adults", in Canadian Family Physician, Vol. 24, December 1978, pp. 1282-1286.

Krupinski, Jerzy, "Urbanization and Mental Heath -- Psychiatric Morbidity, Suicide and Violence in the State of Victoria", in Australian and New Zealand Journal of Psychiatry, Vol. 13, No. 3, 1979, pp. 139-145.

Kubler-Ross, Elisabeth, On Death and Dying, New York, The Macmillan Company, 1969, 260 p.

-----, Questions and Answers on Death and Dying, New York, Macmillan Publishing Co., Inc., 1974, 177 p.

-----, Death -- The Final Stage of Growth, Toronto, Prentice-Hall, 1975, 175 p.

Labovitz, Sandford, and Brinkerhoff, Merlin B., "Structural Changes and Suicide in Canada", in International Journal of Comparative Sociology, Vol. 18, No. 3-4, pp. 254-267.

Latorre, Ronald A., and McLeoad, Emily, "Machiavellianism and Clinical Depression in a Geriatric Sample", in Journal of Clinical Psychology, Vol. 34, No. 3, July 1978, pp. 659-660.

Laury, G.V., "Some Reflections on Aging in the United States", in Geriatrics, Vol. 28, No. 5, May 1973, pp. 178-182.

Leonard, Calista, Understanding and Preventing Suicide, Springfield, Ill., Charles C. Thomas, 1967, 351 p.

Lester, David, "Suicide and Unemployment", in Archives of Environmental Health, Vol. 20, February 1970, pp. 227-278.

Lester, Gene, and Lester, David, Suicide: The Gamble with Death, Englewood Cliffs, N.J., Prentice-Hall, Inc., 176 p.

Lettieri, Dan J., "Suicide in the Aging -- Empirical Prediction of Suicidal Risk Among the Aging", in Journal of Geriatric Psychiatry, Vol. VI, No. 1, 1973, pp. 7-42.

Leviton, D., "The Significance of Sexuality as a Deterrent to Suicide Among the Aged", in Omega, Vol. 4, No. 2, Summer 1973, pp. 163-174.

Liberakis, E.A., and Hoenig, J., "Recording of Suicide in Newfoundland", in The Psychiatric Journal of the University of Ottawa, Vol. 111, No. 4, December 1978, pp. 254-259.

Lindelius, R., "Trends in Suicide in Sweden, 1749-1975", in Acta Psychiatrica Scandinavica, Vol. 60, No. 3, 1979, pp. 295-310.

Lukianowicz, N., "Suicidal Behavior -- An Attempt to Modify the Environment", in Psychiatria Clinica, Vol. 8, No. 3, 1975, pp. 140-154.

MacMahon, Brian, and Pugh, Thomas F., "Suicide in the Widowed", in American Journal of Epidemiology, Vol. 81, No. 1, 1965, pp. 23-31.

Malla, A., and Hoenig, J., "Suicide in Newfoundland and Labrador", in Canadian Journal of Psychiatry, Vol. 24, No. 2, 1979, pp. 139-146.

Marshall, James R., "Changes in Aged White Male Suicide: 1948-1972", in Journal of Gerontology, Vol. 33, No. 5, 1978, pp. 763-768.

McCulloch, J.W., Philip, A.E., and Carstairs, G.M., "The Ecology of Suicide Behavior", in British Journal of Psychiatry, Vol. 113, No. 496, 1967, pp. 313-319.

McGuire, Frederick L., "A Comparison of Suicide and Non-Suicide Deaths Involving Psychotropic Drugs in Four Major U.S. Cities", in American Journal of Public Health, Vol. 66, No. 11, November 1976, pp. 1058-1061.

Mehta, Dinesh, Mathew, Poyanil, and Mehta, Shobhana, "Suicide Pact in a Depressed Elderly Couple: Case Report", in Journal of the American Geriatrics Society, Vol. 26, No. 3, 1978, pp. 136-138.

Miller, Marv, "A Review of the Research on Geriatric Suicide", in Death Education, Vol. 3, No. 3, 1979, pp. 283-296.

-----, "Suicide Among Older Men", in Dissertation Abstracts International, Vol. 37, No. 6-B, December 1976, p. 3156-B.

-----, "Note: Toward a Profile of the Older White Male Suicide", in The Gerontologist, Vol. 18, No. 1, 1978, pp. 80-82.

Moser, Karin, "Depression Major Concern for Elderly in Institutions", news dispatch, The Citizen, issue of May 24, 1979.

Nelson, Franklyn, "Religiosity and Self-Destructive Crises in the Institutionalized Elderly", in Suicide and Life-Threatening Behavior, Vol. 7, No. 2, 1977, p. 67.

Niccolini, Robert, "Reading the Signals of Suicide Risk", in Geriatrics, Vol. 28, No. 3, May 1973, pp. 71-72.

Nordlight, Stephen, "Stress, Aging, and Mental Health", in New York State Journal of Medicine, October 1975, pp. 2135-2137.

Ouellet, Barbara, Health Field Indicators -- Canada and Provinces, Health and Social Policy Directorate, Policy, Planning and Information Branch, Department of National Health and Welfare, Ottawa, September 1979, 106 p.

Pallis, D.J., and Pierce, D.W., "Recognizing the Suicidal Overdose", in Journal of the Royal Society of Medicine, Vol. 72, No. 8, August 1979, pp. 565-571.

Patterson, Robert D., Abrahams, Ruby, and Baker, Frank, "Preventing Self-Destructive Behavior", in Geriatrics, Vol. 29, No. 11, November 1974, pp. 115-121.

Peck, Arthur, "Emotional Reactions to Having Cancer", in American Journal of Roentgenology Radium Therapy and Nuclear Medicine, Vol. 114, No. 3, 1972, pp. 591-599.

Peretti, P.O., Voluntary and Involuntary Retirement of Aged Males and Their Effect on Emotional Satisfaction, Usefulness, Self-Image, Emotional Stability, and Interpersonal Relationships", in Giornale di Gerontologia, Vol. 23, 1975, pp. 38-51.

Peretti, P.O., and Wilson, C., "Anomic and Egoistic Theoretical Factors of Contemplated Suicide Among Voluntary and Involuntary Retired Aged Males", in Giornale Di Gerontologia, Vol. 24, No. 2, 1976, pp. 119-127.

Perlin, Seymour, A Handbook for the Study of Suicide, Toronto, Oxford University Press, 1975, 236 p.

Philibert, Michel, Les Echelles d'âge, Paris, Editions du Seuil, 1968, 419 p.

Pollak, S., and Missliwetz, J., "Suicide in Hospitals of Vienna", in Journal of Legal Medicine, Vol. 83, No. 3, 1979, pp. 233-244.

Portwood, Doris, Common-Sense Suicide — The Final Right, New York, Dodd, Mead and Company, 1978, 142 p.

Poulos, J., "The Geriatric Suicide", in Bedside Nurse, Vol. 4, No. 7, July 1971, pp. 24-26.

Powell, Brian J., and Martin, James K., Economic Implications of an Aging Society in Canada, Policy Research and Strategic Planning Branch, Health and Welfare Canada (paper prepared for the National Symposium on Aging, October 25-27, 1978), 34 p.

Powell, Edwin H., "Occupation, Status and Suicide: Toward a Redefinition of Anomie", in American Sociological Review, Vol. 23, No. 2, April 1958.

Proudfoot, A.T., and Wright, N., "The Physical Consequences of Self-Poisoning by the Elderly", in Gerontologia Clinica, Vol. 14, No. 1, 1972, pp. 25-31.

Quidu, Marguerite, Le Suicide, Paris, Les Editions sociales françaises, 1970, 166 p.

Ramon, Sh., and Breyter, C.E., "Attitudes Towards Self-Poisoning Among British and Israeli Doctors and Nurses in a Psychiatric Hospital", in Israel Annals of Psychiatry, Vol. 16, No. 3, September 1978, pp. 206-218.

Resnik, H.L.P. (ed.), Suicidal Behaviours Diagnosis and Management, Boston, Little, Brown and Company, 1968, 536 p.

Resnik, H.L.P., and Cantor, Joel M., "Suicide and Aging", in Journal of the American Geriatrics Society, Vol. 18, No. 2, 1970, pp. 152-158.

Retha, Robert L., and Gloria J. Lester, "Drug-Related Profile: A DAWN Profile", in The International Journal of the Addictions, Vol. 14, No. 5, 1979, pp. 599-606.

Ripley, Herbert S., "Suicide in General Hospitals", in The Western Journal of Medicine, Vol. 130, No. 5, May 1979, pp. 408-410.

Robins, Lee N., West, Patricia A., and Murphy, George, "The High Rate of Suicide in Older White Men: A Study Testing Ten Hypotheses", in Social Psychiatry, Vol. 12, No. 1, 1977, pp. 1-20.

Roth, Martin, "Cerebral Disease and Mental Disorders of Old Age as Causes of Anti-Social Behaviour", in International Psychiatric Clinics, Vol. 5, No. 3, 1968, pp. 33-58.

Russell, Noyes Jr., Frye, Susan J., and Hartford, Charles E., "Single Case Study -- Conjugal Suicide Pact", in The Journal of Nervous and Mental Disease, Vol. 165, No. 1, 1977, pp. 72-75.

Sainsbury, Peter, Suicide in London, London, Chapman and Hall Ltd., 1955, 116 p.

Schalkwyk, Johanna, Lazer, Charles, and Cumming, Elaine, "Another Look at Status Integration and Suicide", in Social Forces, Vol. 57, No. 4, June 1979, pp. 1063-1080.

Schuckit, Marc A., Morrissey, Elizabeth R., and O'Leary, Michael R., "Alcohol Problems in Elderly Men and Women, in Addictive Diseases: An International Journal, Vol. 3, No. 3, 1978, pp. 405-416.

Sendbuehler, J.M., "Suicide and Attempted Suicide Among the Aged", in Canadian Medical Association Journal, Vol. 117, No. 5, September 1977, pp. 418-419.

-----, "Suicide and Attempted Suicide Among the Aged", in Canadian Medical Association Journal, Vol. 117, No. 10, November 1977, p. 1136.

-----, "Suicide and Attempted Suicide Among the Aged", in Canadian Medical Association Journal, Vol. 117, No. 11, December 1977, p. 1250.

Sendbuehler, J.M., and Goldstein, S., "Attempted Suicide Among the Aged", in Journal of the American Geriatrics Society, Vol. 25, No. 6, 1977, pp. 245-248.

Shainess, Natalie, "Treatment of Crises in the Lives of Women: Object Loss and Identity Threat", in American Journal of Psychotherapy, Vol. 31, April 1977, pp. 227-237.

Shichor, David, and Bergman, Simon, "Patterns of Suicide Among the Elderly in Israel", in The Gerontologist, Vol. 19, No. 5, 1979, pp. 487-495.

Shneidman, Edwin S. (ed.), Essays in Self-Destruction, New York, Science House, Inc., 1967, 554 p.

-----, On the Nature of Suicide, San Francisco, Jossey-Bass Inc. Publishers, 1969, 146 p.

Short, James F., "Comment on Bock and Webber's 'Social Status and Relational System of Elderly Suicides'", in Life-Threatening Behavior, Vol. 2, No. 3, Fall 1972, pp. 160-162.

Shulman, Eliot, "Assisted Suicide: Some Ethical Considerations", in International Journal of Health Services, Vol. 7, No. 4, 1978, pp. 201-209.

Slater, Eliot, "Assisted Suicide: Some Ethical Considerations", in International Journal of Health Services, Vol. 6, No. 2, 1976, pp. 321-329.

Sletten, Ivan W., and Barton, John L., "Suicide Patients in the Emergency Room: A Guide for Evaluation and Disposition", in Hospital Community Psychiatry, Vol. 30, No. 6, June 1979.

Sonneck, G., and Ringel, E., "Suicide Prevention and the Community", in Mental Health and Society, Vol. 4, 1977, pp. 80-84.

Stack, Steven, "Suicide: A Comparative Study", in Social Forces, Vol. 57, No. 2, December 1978, pp. 644-653.

Sutkamp Freideman, Joyce, "Cry for Help: Suicide in the Aged", in Journal of Gerontological Nursing, Vol. 2, No. 3, May-June 1976, pp. 28-32.

Syer, Diane S., and Scott, Shirley, A National Survey of Canadian Crisis Centres (Report on the Survey), 1978, 18 p.

Théorêt, C., Vehicles of Economic Well-Being Among the Aged: Current Setting and Future Prospects (paper presented at the Canadian Association of Gerontology Meeting, Halifax, November 1-4, 1979), Ottawa, Health and Welfare Canada, Policy, Planning and Information Branch, 51 p.

Tideiksaar, Rein, "On Suicide and the Aging", in American Journal of Public Health, Vol. 68, No. 8, August 1978, pp. 782-783.

-----, "Suicide in the Elderly", in American Family Physician, Vol. 19, No. 3, 1979, pp. 28-30.

Tuckman, Jacob, and Youngman, William F., "A Scale for Assessing Suicide Risk of Attempted Suicides", in Journal of Clinical Psychology, Vol. 24, No. 1, January 1968, pp. 17-19.

United Nations, Demographic Yearbook, 1977, New York, 1978.

Volker Wenz, Friedrich, "Family Constellation Factors, Depression, and Parent Suicide Potential", in American Journal of Orthopsychiatry, Vol. 49, No. 1, January 1979, pp. 164-166.

Waldron, Ingrid, "Why Do Women Live Longer than Men?", in Social Science and Medicine, Vol. 10, No. 7-8, 1976, pp. 349-362.

Walk, David, "Suicide and Community Care", in British Journal of Psychiatry, Vol. 113, No. 505, 1967, pp. 1381-1391.

Wenz, Friedrich V., "Effects of Seasons and Sociological Variables on Suicidal Behavior", in Public Health Reports, Vol. 92, No. 3, May-June 1977, pp. 233-239.

-----, "Marital Status, Anomie, and Forms of Social Isolation: A Case of High Suicide Rate Among the Widowed in an Urban Sub-Area", in Disease of the Nervous System, Vol. 38, No. 11, November 1977, pp. 891-895.

Williams, Robert H., "The End of Life in the Elderly", in Postgraduate Medicine, Vol. 54, No. 6, December 1973, pp. 55-59.

Wolff, Kurt, "The Treatment of the Depressed and Suicidal Geriatric Patient", in Geriatrics, Vol. 26, No. 7, July 1971, pp. 65-69.

World Health Organization, Prevention of Suicide, Geneva, Public Health Paper No. 35, 1968, 84 p.

-----, Suicide Statistics -- The Problem of Comparability, Geneva WHO Chronicle, Vol. 29, No. 5, May 1975, pp. 188-193.

-----, World Health Statistics Report, Geneva, Vol. 29, No. 7, 1976, pp. 380-413.

Zung, William W.K., "Suicide Prevention by Suicide Detection", in Psychosomatics, Vol. 20, No. 3, March 1979, pp. 149-159.

Zung, William W.K., and Moore, James, "Suicide Potential in a Normal Adult Population", in Psychosomatics, Vol. 17, No. 1, January/February/March 1976, pp. 37-41.

Unknown Author, "Suicide Patterns in the Elderly", in Geriatrics, Vol. 22, No. 12, December 1967, p. 68.

Unknown Author, "Death Rates in Canada Lowest Among Married Pesons", in Metropolitan Life Statistical Bulletin, Vol. 54, August 1973, pp. 4-6.